

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 1 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611981	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD,BOLT: CS, SIZE: 1-1/4 IN X 8-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 220MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL, UNC, BOLT: ASTM A193, GR.B7, CLASS 2A, NUT: ASTM A194 GR.2H, CLASS 2B. REF. TO WWS-268 SPEC 3.1,3.2, SIZE : 1-1/4 IN X 8-3/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 220MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:220MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610281, 9900102624, 9900102694, 8138611981, 9900239154.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 2 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102708	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-3/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/8-6UNC X 235MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-3/8 IN, LENGTH 235MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/8 IN, LENGTH 235MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/8 IN
LENGTH	:235MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 3 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900255280	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1 IN,	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 290MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1 IN, LENGTH 292MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEA VY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 290MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:290MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 4 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239132	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1/2 IN,	SHORT DESCRIPTION	STUDBOLT: 1/2-13UNC X 70MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1/2 IN, LENGTH 2-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1/2 IN, LENGTH 70MM, THREADS 13 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1/2 IN
LENGTH	:70MM
THREADS	:13 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 5 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212578	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 190MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 7-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7, C ADMIMUM PLATED ASTM-B696, ADP, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 190MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:190MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 6 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900243776	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 180MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 7 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 180MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 180MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 7 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	6232010111	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K62 - Machine Tools	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT, CS, SIZE: 5/8 IN X 5-7/8 IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 150MM;B7;BLK
LONG DESCRIPTION	STUD: BOLT CARBON STEEL, ALL-THREAD, 11 UNC, CS, ASTM A193-B7, SIZE: 5/8 IN X 5-7/8 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 150MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:150MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 8 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239156	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 240MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 9-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7,CA DMIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H,C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 240MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:240MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900239156, 9900234434.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 9 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913055936	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	35 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B8M CL 2, UNC, >495MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, 1/2 IN 76 CM	SHORT DESCRIPTION	STUDBOLT: 1/2-13UNC X 760MM;B8M;NUT
LONG DESCRIPTION	BOLT: STUD, 1/2 IN X 76 CM, FULL THREAD, COMPLETE WITH NUT, SS316, [PMI (POSITIVE MATERIAL IDENTIFICATION) WILL BE CONDUCTED BY STAR ENERGY WAREHOUSE]	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1/2 IN, LENGTH 760MM, THREADS 13 UNC, MATERIAL STAINLESS STEEL 316, SPECIFICATION ASTM A193, GRADE B8M, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-8M

CHARACTERISTIC AND VALUE	
DIAMETER	:1/2 IN
LENGTH	:760MM
THREADS	:13 UNC
MATERIAL	:STAINLESS STEEL 316
SPECIFICATION	:ASTM A193
GRADE	:B8M
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-8M

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 10 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234431	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K62 - Machine Tools	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1 IN, LENGTH 7-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 185MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1 IN, LENGTH 7-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 185MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:185MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 11 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102698	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-1/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 290MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-1/4 IN, LENGTH 292MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 290MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:290MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 12 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234713	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-3/8 IN, LENGTH 10-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-3/8-6UNC X 265MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-3/8 IN, LENGTH 10-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 OR 8 TPI, GRADE B7,CADMIUM OR ZINC PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, PITCH DIA. 0.0030 IN TO 0.0040 IN (H8), C/W MILL CERTIFIC ATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/8 IN, LENGTH 265MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/8 IN
LENGTH	:265MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 13 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913056147	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, M30 X 1000 MM, A193 GR B7	SHORT DESCRIPTION	STUDBOLT: M30-3.50 X 1000MM;B7;BLK;NUT
LONG DESCRIPTION	BOLT: STUD, FULL THREAD, SIZE M30 LENGTH 1000 MM, MATERIAL A193 GR B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER M30, LENGTH 1000MM, THREADS 3.5MM, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:M30
LENGTH	:1000MM
THREADS	:3.5MM
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 14 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903008855	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	PC	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: 1-1/4 IN X 6-3/4 IN, A193 B7	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 170MM;B8;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 6-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL STAINLESS STEEL 304, UNC, GRADE B7, C /W 2 HEAVY HEX NUTS SS 304 ASTM A194 GR 2H, [PMI (POSITIVE MATERIAL IDENTIFICATION) WILL BE CONDUCTED BY STAR ENERGY WAREHOUSE]	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 170MM, THREADS 7 UNC, MATERIAL STAINLESS STEEL 304, SPECIFICATION ASTM A193, GRADE B8, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-8

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:170MM
THREADS	:7 UNC
MATERIAL	:STAINLESS STEEL 304
SPECIFICATION	:ASTM A193
GRADE	:B8
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-8

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 15 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610071	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-1/8 IN X 6 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 150MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193-B7, ASTM A194-2H, ALL-THREAD, 10 UNC, SIZE: 1-1/8 IN X 6 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 150MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:150MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610071, 9900255281.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 16 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611471	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1 IN X 7-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 190MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, UNC, SIZE: 1 IN X 7-1/2 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 190MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:190MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 17 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234715	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 5/8 IN, LENGTH 8-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 225MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 8-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 225MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:225MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 18 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102676	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-1/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 115MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-1/8 IN, LENGTH 115MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 115MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:115MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 19 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610701	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 100MM;B7;FKM;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD, 3/4 IN, 4 IN, UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 100MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:3/4 IN
LENGTH	:100MM
THREADS	:10 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 20 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234423	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-5/8 IN, LENGTH 12-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-5/8-8UN X 310MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-5/8 IN, LENGTH 12-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 H EAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-5/8 IN, LENGTH 310MM, THREADS 8 UN, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-5/8 IN
LENGTH	:310MM
THREADS	:8 UN
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 21 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903072308	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	14 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B8, METRIC
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: ALL-THREAD,GR B8	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 160MM;B8;NUT
LONG DESCRIPTION	STUD BOLT: ALL-THREAD,GR B8 COATED HARDENED, LENGTH 160 MM SPECIFICATION ASTM A 193, TYPE HEAVY,GRADE B8,MATERIAL SUS304,DIAMETER 1- 1/8 IN,THREADS UNC, COMPLETE WITH COMPLETE WITH, HEAVY STUD BOLT : UNC 1-1/8 IN, LENGTH 160MM, BOLTS ASTM A193 B8 CLASS 2, NUTS ASTM A194 GRADE 8, BOLTS & NUT MATERIAL SUS-304 HARDENED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 160MM, THREADS 7 UNC, MATERIAL STAINLESS STEEL 304, SPECIFICATION ASTM A193, GRADE B8, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-8

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:160MM
THREADS	:7 UNC
MATERIAL	:STAINLESS STEEL 304
SPECIFICATION	:ASTM A193
GRADE	:B8
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-8

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 22 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102621	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-1/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 270MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-1/8 IN, LENGTH 270MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 270MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:270MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 23 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212538	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 4-1/2	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 115MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 4-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 9 TPI, GRADE B7, CAD MIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, PITCH DIA. 0.0025 IN TO 0.0030 IN (H6), C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 115MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:115MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 24 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900252819	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K62 - Machine Tools	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/4-5UNC X 285MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-3/4 IN, LENGTH 11-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7,CADMIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/4 IN, LENGTH 285MM, THREADS 5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/4 IN
LENGTH	:285MM
THREADS	:5 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 25 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212557	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	PC	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 7/8 IN, LENGTH 5-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 140MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 5-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 9 TPI, GRADE B7, CAD MIUM PLATED ASTM-B696, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H AND MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 140MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:140MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 26 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234464	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 4 IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 100MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 100MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 100MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900212546, 9900234464, 9903001281, 9900102633, 8138612111.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 27 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138980701	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT,CS NUT, SIZE: 1 IN X 170	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 170MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: CARBON STEEL AND NUT, A193GR.B7/A, SIZE: 1 IN X 170	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 170MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:170MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138980701, 9900234447.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 28 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138612121	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X125MM;B7;FKM;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD, 3/4 IN X 5 IN, UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 125MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:3/4 IN
LENGTH	:125MM
THREADS	:10 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138110051, 8138612121.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 29 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610381	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-3/4 IN X 10 IN	SHORT DESCRIPTION	STUDBOLT: 1-3/4-5UNC X 255MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, UNC, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 1-3/4 IN X 10 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/4 IN, LENGTH 255MM, THREADS 5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/4 IN
LENGTH	:255MM
THREADS	:5 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 30 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610941	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1 IN X 3 IN	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 75MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, 8 UNC, SIZE: 1 IN X 3 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 75MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:75MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 31 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212540	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1/2 IN, LENG 2-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1/2-13UNC X 65MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1/2 IN, LENGTH 2-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, CADMIUM PLATED ASTM-B69, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1/2 IN, LENGTH 65MM, THREADS 13 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1/2 IN
LENGTH	:65MM
THREADS	:13 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900245814, 9900212540.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 32 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913056156	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, 3/8 UNC X 1000 MM, A193 GR B7	SHORT DESCRIPTION	STUDBOLT: 3/8-16UNC X 1000MM;B7;BLK;NUT
LONG DESCRIPTION	BOLT: STUD, FULL THREAD, SIZE 3/4 IN UNC LENGTH 1000 MM, MATERIAL A193 GR B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/8 IN, LENGTH 1000MM, THREADS 16 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/8 IN
LENGTH	: 1000MM
THREADS	: 16 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9913056152, 9913056156.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 33 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611791	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD,BOLT:CS,THREAD,SIZ E:1 IN X13-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 350MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL AND NUT, ALL- THREAD, 8 UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 1 IN X 13-3/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL- THREAD, DIAMETER 1 IN, LENGTH 350MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:350MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 34 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234471	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 8 IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 205MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 8 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 205MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:205MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138611411, 9900234471.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 35 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903000299	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 140MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 3/4 IN, LENGTH 140MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 H EAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 140MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 140MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900234466, 9903000299, 9900212547, 8138110021, 9900102636.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 36 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138612001	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-1/4 IN X 9-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 235MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, UNC, SIZE: 1-1/4 IN X 9-1/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 235MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:235MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138612001, 9900102670, 8138611811.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 37 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900103994	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 3/4 IN, 216MM FULL THREAD	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 215MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 3/4 IN, LENGTH 216MM, FULL THREAD, SPECIFICATION A193, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HE X NUTS ASTM A194 GR 2H, COMPLETE WITH MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 215MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 215MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138980121, 9900103994.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 38 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913056557	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, 7/8 IN FOR 10 IN FLANGE	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 120MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 4-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, GRADE B7, FOR 10 IN FLANGE, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H, DELIVERY COMPLETE WITH MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 120MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:120MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900239138, 9913056557, 8138611281, 8138612151.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 39 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900245817	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, 3/4 X 3-1/2 IN,	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 90MM;B7;CD;NUT
LONG DESCRIPTION	BOLT: STUD, 3/4 X 3-1/2 IN, ALLOY STEEL, FULL THREAD STEEL;ASTM A-193; GR B7;C/W 2 HEX NUTS ASTM A-194 GR 2 H;CADMIUM PLATED;	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 90MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:3/4 IN
LENGTH	:90MM
THREADS	:10 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 40 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913054351	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	14 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B8, METRIC
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT : UNC 5/8 IN, LENGTH 100MM	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 100MM;B8;NUT
LONG DESCRIPTION	STUD BOLT : UNC 5/8 IN, LENGTH 100MM FULL THREAD, C/W 2EA NUTS, BOLTS ASTM A193 B8 CLASS 2, NUTS ASTM A194 GRADE 8, BOLTS & NUT MATE RIAL SUS- 304 HARDENED, 4 IN FLANGES NPS, 150 LBS RATING	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 100MM, THREADS 11 UNC, MATERIAL STAINLESS STEEL 304, SPECIFICATION ASTM A193, GRADE B8, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-8

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:100MM
THREADS	:11 UNC
MATERIAL	:STAINLESS STEEL 304
SPECIFICATION	:ASTM A193
GRADE	:B8
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-8

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 41 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610431	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT-NUT 1-1/8 IN, 11 IN, UNC, B7,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 280MM;B7;FKM;NUT
LONG DESCRIPTION	STUD: BOLT AND NUT ALL-THREAD, 1-1/8 IN, 11 IN, UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 280MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:280MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 42 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900104662	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-1/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 215MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-1/4 IN, LENGTH 216MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 215MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:215MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9903003148, 9900234432, 8138610061, 8138611971, 9900239152, 9900104662.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 43 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102665	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K62 - Machine Tools	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1 IN,	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 180MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1 IN, LENGTH 178MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEA VY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 180MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:180MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900102665, 9900234430.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 44 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611761	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT, CS, SIZE: 5/8 IN X 6-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 160MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL AND NUT, ALL-THREAD, 11 UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 5/8 IN X 6-1/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 160MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:160MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 45 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610821	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT,CS,SIZE: 7/8 IN X 5-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 135MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL, ALL-THREAD, 10 UNC, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 7/8 IN X 5-1/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 135MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:135MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900102646, 8138610821.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 46 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102672	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1 IN,	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 285MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1 IN, LENGTH 286 MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HE AVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 285MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:285MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 47 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234450	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 5 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 130MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 5 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 130MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:130MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 48 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903037092	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 2 IN,	SHORT DESCRIPTION	STUDBOLT: 2IN-4.5UNC X 325MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 2 IN, LENGTH 324 MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HE AVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 2 IN, LENGTH 325MM, THREADS 4.5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 2 IN
LENGTH	: 325MM
THREADS	: 4.5 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 49 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102663	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1 IN,	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 165MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1 IN, LENGTH 165MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEA VY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 165MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:165MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900102663, 9900234446, 9900102658.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 50 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903014990	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1/2 IN,	SHORT DESCRIPTION	STUDBOLT: 1/2-13UNC X 65MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1/2 IN, LENGTH 64MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HE AVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1/2 IN, LENGTH 65MM, THREADS 13 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1/2 IN
LENGTH	:65MM
THREADS	:13 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610121, 9903014990.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 51 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239169	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-5/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-5/8-8UN X 285MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-5/8 IN, LENGTH 11-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 H EAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-5/8 IN, LENGTH 285MM, THREADS 8 UN, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-5/8 IN
LENGTH	:285MM
THREADS	:8 UN
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138611161, 9900239169.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 52 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611291	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CARBON STEEL 3/4IN X 5-1/4IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 135MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: CARBON STEEL, INCLUDE NUT, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, UNC, SIZE, 3/4 IN X 5-1/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 135MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 135MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138611291, 9900105718.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 53 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611441	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 7/8 IN X 9 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 230MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, 9 UNC, SIZE: 7/8 IN X 9 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 230MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:230MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 54 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611211	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-5/8 IN X 11 IN	SHORT DESCRIPTION	STUDBOLT: 1-5/8-8UN X 280MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, UNC, SIZE: 1-5/8 IN X 11 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-5/8 IN, LENGTH 280MM, THREADS 8 UN, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-5/8 IN
LENGTH	:280MM
THREADS	:8 UN
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 55 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903001283	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 5/8IN X 3-1/4IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 85MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 3-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7,C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 85MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:85MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 56 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903017802	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUDBOLT: W/NUTS, M20 X 110 LG	SHORT DESCRIPTION	STUDBOLT: M20-2.50 X 110MM;B7;BLK;NUT
LONG DESCRIPTION	STUDBOLT: W/NUTS, M20 X 110 LONG, ASTM A193 GR B7, A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER M20, LENGTH 110MM, THREADS 2.5MM, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:M20
LENGTH	:110MM
THREADS	:2.5MM
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 57 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913055961	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K76 - Fittings and Flanges	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	14 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B8, METRIC
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT : DIAMETER 7/8 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 115MM;B8;NUT
LONG DESCRIPTION	STUD BOLT : DIAMETER 7/8 IN X LENGTH 4-1/2 IN, FULL THREAD, MATERIAL A193 GR.B8, UNC, C/W 2 HEAVY HEX. NUTS A194 GR.8 SS 304, [PMI (POSITIVE MATERIAL IDENTIFICATION) WILL BE CONDUCTED BY STAR ENERGY WAREHOUSE]	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 115MM, THREADS 9 UNC, MATERIAL STAINLESS STEEL 304, SPECIFICATION ASTM A193, GRADE B8, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-8

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:115MM
THREADS	:9 UNC
MATERIAL	:STAINLESS STEEL 304
SPECIFICATION	:ASTM A193
GRADE	:B8
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-8

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9903008850, 9913055961.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 58 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900253003	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 3/4 IN, LE 5-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 145MM;B7M;ZP;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 5-3/4 IN FULL THREAD, SPECIFICATION A193, ZINC PLATED, GRADE B7M, 10 UNC, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2HM	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 145MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7M, FINISH ZINC PLATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2HM

CHARACTERISTIC AND VALUE	
DIAMETER	:3/4 IN
LENGTH	:145MM
THREADS	:10 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7M
FINISH	:ZINC PLATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2HM

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 59 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900222472	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 330MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/2 IN, LENGTH 13 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7, CADM IUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, PITCH DIA. 0.0030 IN TO 0.0040 IN (H8), C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 330MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:330MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 60 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900236574	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-1/4 IN, LENGTH 3-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 95MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 3-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7,CA DMIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, PITCH DIA. 0.0030 IN TO 0.0040 IN (H8), C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 95MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:95MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 61 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239159	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 255MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/8 IN, LENGTH 10 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7,CADMI UM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 255MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:255MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900239159, 9900236571.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 62 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900105719	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-5/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-5/8-8UN X 300MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-5/8 IN, LENGTH 300MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-5/8 IN, LENGTH 300MM, THREADS 8 UN, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-5/8 IN
LENGTH	:300MM
THREADS	:8 UN
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900234421, 8138980751, 9900105719.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 63 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234476	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 12 IN	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 305MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 12 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY H EX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 305MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:305MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 64 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610461	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS,SIZE: 1-1/2 IN X 11-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 300MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, 6 UNC, SIZE: 1-1/2 IN X 11-3/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 300MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:300MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 65 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611851	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD,BOLT: CS, SIZE: 1-1/2 INX13-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 345MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL AND NUT, ALL-THREAD, 6 UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 1-1/2 IN X 13-1/2 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 345MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:345MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 66 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234714	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K62 - Machine Tools	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-3/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/8-6UNC X 280MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-3/8 IN, LENGTH 280MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/8 IN, LENGTH 280MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/8 IN
LENGTH	:280MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900234714, 8138611131, 8138610401.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 67 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212564	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1 IN, LENGTH 5-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 135MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1 IN, LENGTH 5-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 8 TPI, GRADE B7, CADMIUM PLATED ASTM-B696, ADP, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 135MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:135MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 68 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239151	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 190MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 7-1/2 IN FULL THREAD, SPECIFICATION A193, GRADE B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE AD E B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GRADE 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 190MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:190MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610181, 9900239151.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 69 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138980551	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 7/8 IN X 8-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 215MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, 9 UNC, SIZE: 7/8 IN X 8-1/2 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 215MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:215MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900102654, 8138980551.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 70 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611141	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-1/8 IN X 8 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 205MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193 - B7, ASTM A194 - 2H, ALL-THREAD, UNC, SIZE: 1-1/8 IN X 8 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 205MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:205MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 71 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102747	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: MACHINE, UNC 3/4 IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 50MM;B7;BLK;NUT
LONG DESCRIPTION	BOLT: MACHINE, UNC 3/4 IN LENGTH 51 MM, FULL THREAD MACHINE BOLT: UNC 3/4 IN, LENGTH 51MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 50MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:3/4 IN
LENGTH	:50MM
THREADS	:10 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 72 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234452	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	00 - temporary
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	00 - temporary
BASE UOM	EA	MESC SUB SUB GROUP	00 - temporary
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 7/8 IN, LENGTH 5-11/16 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 145MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 5-11/16 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HE AVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 145MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:145MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 73 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234480	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 6-1/4	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 160MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 7/8 IN, LENGTH 6-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 9 TPI, GRADE B7, CAD MIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 160MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:160MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 74 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610161	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 1-1/4 IN X 7-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 185MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193-B7, ASTM A194-2H, ALL-THREAD, 10 UNC, SIZE: 1-1/4 IN X 7-1/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 185MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:185MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610161, 9900102622, 9900212577.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 75 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212577	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-1/4 IN, LE 7-1/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 185MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 7-1/4 IN FULL THREAD, SPECIFICATION A193, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 185MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:185MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138610161, 9900102622, 9900212577.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 76 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610321	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT,CS,SIZE: 1-1/4 IN X 9-3/4 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 245MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL, ALL-THREAD, 7 UNC, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 1-1/4 IN X 9-3/4 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 245MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:245MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 77 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102718	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/4-5UNC X 290MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-3/4 IN, LENGTH 292 MM FULL THREAD SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, COMPLETE WITH 2 H EAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/4 IN, LENGTH 290MM, THREADS 5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/4 IN
LENGTH	:290MM
THREADS	:5 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 78 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234719	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN,	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 140MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 5/8 IN, LENGTH 5-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAV Y HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 140MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:140MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 79 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900245826	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	BOLT: STUD, 1-1/8 X 7-3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 195MM;B7;CD
LONG DESCRIPTION	BOLT: STUD, 1-1/8 X 7-3/4 IN, FULL THREAD MATERIAL : ALLOY STEEL ASTM-A193 GR. B7THREAD TYPE : UNC; TPI : 8;FINISH : CADMIUM PLATED ASTM-B696;	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 195MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:195MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 80 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903008857	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	PC	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: 1-1/4 IN X 8-1/4 IN, A193 B7	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 210MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 8-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL,UNC, GRADE B7, C/W 2 HEA VY HEX NUTS ASTM A194 GR 2H, [PMI (POSITIVE MATERIAL IDENTIFICATION) WILL BE CONDUCTED BY STAR ENERGY WAREHOUSE]	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 210MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:210MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900239153, 9903008857, 9900212580, 9900102623.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 81 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611371	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT-NUT 5/8 IN, 3 IN, UNC, B7, 2H	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 75MM;B7;FKM;NUT
LONG DESCRIPTION	STUD: BOLT AND NUT ALL-THREAD, 5/8 IN, 3 IN, UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 75MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:75MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 82 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611861	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD,BOLT: CROME, SIZE:7/8 INX 6-7/8 IN	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 175MM;B7;CP;NUT
LONG DESCRIPTION	STUD: BOLT, CHROME AND NUT, ALL-THREAD, 9 UNC, ASTM A193 - B7 , ASTM A 194 - 2H, SIZE: 7/8 IN X 6-7/8 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 175MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CHROME PLATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:175MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CHROME PLATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 83 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138110021	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: CS, SIZE: 3/4 IN X 5-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 140MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: CARBON STEEL, ASTM A193-B7, ASTM A194-2H, ALL-THREAD, 10 UNC, SIZE: 3/4 IN X 5-1/2 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 140MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 140MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900234466, 9903000299, 9900212547, 8138110021, 9900102636.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 84 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900212558	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: 7/8 X 6 IN, FULL THREAD	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 150MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: 7/8 X 6 IN, FULL THREAD MATERIAL ALLOY STEEL ASTM-A193 GR. B7, THREAD TYPE UNC, FINISH CADMIUM PLATED ASTM-B696, ADP, COM PLETE WITH 2 EA HEX. NUTS ASTM-A194 GR. 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 150MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:150MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 85 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102655	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 7/8 IN,	SHORT DESCRIPTION	STUDBOLT: 7/8-9UNC X 225MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 7/8 IN, LENGTH 223MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 H EAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 7/8 IN, LENGTH 225MM, THREADS 9 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:7/8 IN
LENGTH	:225MM
THREADS	:9 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 86 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9903074765	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/4-5UNC X 360MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-3/4 IN, LENGTH 360MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/4 IN, LENGTH 360MM, THREADS 5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/4 IN
LENGTH	:360MM
THREADS	:5 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 87 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9913057654	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMTR 1-3/8 IN, LENGTH 11 IN	SHORT DESCRIPTION	STUDBOLT: 1-3/8-6UNC X 280MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: FULL THREADED, DIAMETER 1-3/8 IN, LENGTH 11 IN, CADMIUM PLATED, SPECIFICATION A193, GR B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/8 IN, LENGTH 280MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/8 IN
LENGTH	:280MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 88 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234462	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 12 IN	SHORT DESCRIPTION	STUDBOLT: 3/4-10UNC X 305MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 3/4 IN, LENGTH 12 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY H EX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 3/4 IN, LENGTH 305MM, THREADS 10 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 3/4 IN
LENGTH	: 305MM
THREADS	: 10 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 8138612091, 9900234462.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 89 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900239782	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/8 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 190MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/8 IN, LENGTH 7-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7,CADMIUM P LATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 190MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:190MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900236567, 9900239782.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 90 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234426	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 2 IN, LENGTH 14-3/4IN	SHORT DESCRIPTION	STUDBOLT: 2IN-4.5UNC X 375MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 2 IN, LENGTH 14-3/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 2 IN, LENGTH 375MM, THREADS 4.5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	: 2 IN
LENGTH	: 375MM
THREADS	: 4.5 UNC
MATERIAL	: ALLOY STEEL
SPECIFICATION	: ASTM A193
GRADE	: B7
FINISH	: BLACK OXIDE
ADDITIONAL ITEMS	: C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 91 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102629	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 5/8 IN, 114MM FULL THREAD	SHORT DESCRIPTION	STUDBOLT: 5/8-11UNC X 115MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 5/8 IN, LENGTH 114 MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 5/8 IN, LENGTH 115MM, THREADS 11 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:5/8 IN
LENGTH	:115MM
THREADS	:11 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900102629, 9900236561.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 92 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900102720	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-3/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-3/4-5UNC X 625MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-3/4 IN, LENGTH 623 MM FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H AND COMPLETE WITH MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/4 IN, LENGTH 625MM, THREADS 5 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/4 IN
LENGTH	:625MM
THREADS	:5 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 93 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900236567	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-1/8 IN, LENGTH 7-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/8-7UNC X 190MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/8 IN, LENGTH 7-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, 7 TPI, GRADE B7,CA DMIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2H, PITCH DIA. 0.0030 IN TO 0.0040 IN (H8), C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/8 IN, LENGTH 190MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/8 IN
LENGTH	:190MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900236567, 9900239782.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 94 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900105720	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/Ni, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1-1/4 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 230MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1-1/4 IN, LENGTH 229MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEAVY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 230MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:230MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9903003144, 8138610301, 8138611991, 9900105720.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 95 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900247225	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIAMETER 1-1/2 IN,	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 260MM;B7;CD;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/2 IN, LENGTH 10-1/4 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, CADMIUM PLATED ASTM-B696, C/W 2 HEAVY HEX NUTS ASTM A194 GR 2HM, C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 260MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH CADMIUM PLATED ASTM B696, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:260MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:CADMIUM PLATED ASTM B696
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900247225, 9900234419.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 96 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900104673	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: UNC 1 IN,	SHORT DESCRIPTION	STUDBOLT: 1-8UNC X 160MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: UNC 1 IN, LENGTH 160MM, FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, COMPLETE WITH 2 HEA VY HEX NUTS ASTM A194 GR 2H	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1 IN, LENGTH 160MM, THREADS 8 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1 IN
LENGTH	:160MM
THREADS	:8 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9900234445, 9900239171, 9900245822, 9900104673, 8138611041.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 97 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138610551	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 240MM;B7;FKM;NUT
LONG DESCRIPTION	STUD BOLT AND NUT: ALL-THREAD, 1-1/2 IN, 9-1/2 IN, UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 240MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:240MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 98 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138110111	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: AND NUT, ALL-THREAD, 1-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/2-6UNC X 230MM;B7;FKM;NUT
LONG DESCRIPTION	STUD BOLT: AND NUT, ALL-THREAD, 1-1/2 IN, 9 IN,UNC, CS, ASTM A193 - B7, ASTM A194 - 2H, FLUORO CARBON COATED	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/2 IN, LENGTH 230MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH FLUOROCARBON COATED, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/2 IN
LENGTH	:230MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:FLUOROCARBON COATED
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 99 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	9900234432	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD BOLT: DIA 1-1/4 IN, LENGTH 8-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-1/4-7UNC X 215MM;B7;BLK;NUT
LONG DESCRIPTION	STUD BOLT: DIAMETER 1-1/4 IN, LENGTH 8-1/2 IN FULL THREAD, SPECIFICATION A193, GR B7, MATERIAL CARBON STEEL, UNC, GRADE B7, C/W 2 HE AVY HEX NUTS ASTM A194 GR 2H AND C/W MILL CERTIFICATE	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-1/4 IN, LENGTH 215MM, THREADS 7 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-1/4 IN
LENGTH	:215MM
THREADS	:7 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S): 9903003148, 9900234432, 8138610061, 8138611971, 9900239152, 9900104662.

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)

MATERIAL CATALOGING REPORT - APPROVAL SHEET

DATE: 05-Aug-2022

PAGE: 100 of 100

OLD DESCRIPTION		NEW DESCRIPTION	
MATERIAL NUMBER	8138611111	MATERIAL NUMBER	
NOUN	-	NOUN	STUD-BOLT
MODIFIER	-	MODIFIER	ALL-THREAD
MAIN CHARACTERISTIC		MESC GROUP	81 - FASTENERS, ETC.
MATERIAL GROUP	K81 - Fasteners, Etc.	MESC SUB GROUP	38 - STUD BOLTS, ALLOY STEEL
BASE UOM	EA	MESC SUB SUB GROUP	03 - STUD BOLTS, ALLOY STEEL, ASTM A193 GR B7 +ZN/NI, <500MM
		Material Group	K81 - Fasteners, Etc.
		BASE UOM	EA - each

SHORT DESCRIPTION	STUD: BOLT,CS,SIZE: 1-3/8 IN X 10-1/2 IN	SHORT DESCRIPTION	STUDBOLT: 1-3/8-6UNC X 265MM;B7;BLK;NUT
LONG DESCRIPTION	STUD: BOLT, CARBON STEEL, ALL-THREAD, 7 UNC, ASTM A193 - B7, ASTM A194 - 2H, SIZE: 1-3/8 IN X 10-1/2 IN	LONG DESCRIPTION	STUD-BOLT: ALL-THREAD, DIAMETER 1-3/8 IN, LENGTH 265MM, THREADS 6 UNC, MATERIAL ALLOY STEEL, SPECIFICATION ASTM A193, GRADE B7, FINISH BLACK OXIDE, ADDITIONAL ITEMS C/W 2 HEX NUT ASTM A194-2H

CHARACTERISTIC AND VALUE	
DIAMETER	:1-3/8 IN
LENGTH	:265MM
THREADS	:6 UNC
MATERIAL	:ALLOY STEEL
SPECIFICATION	:ASTM A193
GRADE	:B7
FINISH	:BLACK OXIDE
ADDITIONAL ITEMS	:C/W 2 HEX NUT ASTM A194-2H

MANUFACTURER	MANUFACTURER REF
--------------	------------------

PHYSICAL INSPECTION RESULT:

POTENTIAL DUPLICATION WITH OTHER MATERIAL(S):

Prepared By
PT. Sinergi Solusi Teknik

Verified By
Star Energy Geothermal

(.....)

(.....)