

File No. PESD-4500PROC(MISC)/540/2022-PE-SD-450_PE**Govt. of India**

BHEL

PE&SD-PE&SD

450_ ENGINEERING_PE-SD

SUBJECT

Main Category : Procurement

Sub Category :

Description : PR Documents-Bolting Package-Namrup-1900148851

OTHER DETAILS

Language : English

Remarks :

No correspondence is attached in this file.

Note No. #1

Following PR documents (PR No-1900148851) for the procurement of Bolting package for Namrup project are sent for your review and approval:

- 1.Draft PR-1900148851
- 2.Engg Check list
- 3.PBF
- 4.QAP
- 5.PQC Docs
- 6.BHEL specs



PQC-Annexure-1.pdf



PQC.pdf



PBF-BOLTING PACKAGE-NAMRUP.pdf



BOLTING-SMQP.pdf



BOLTING SPECS.pdf



ECL-BOLTING PACKAGE.pdf



1900148851.pdf

29/11/2022 1:11 PM

Imran Ahmad
(SE(Design/PE-SD))

Note No. #2

PR Approved and Released for further action by Purchase.



PR 1900148851 Released.pdf

29/11/2022 1:24 PM

Golakoti Srikanth
(DGM(Design/PE-SD))

Note No. #3

29/11/2022 1:26 PM

Amit Kundan Kumar
(SO(Purchase/PE-SD))

Note No. #1

Attachment:PQC-Annexure-1.pdf

Annexure-1**Supply References in the Last 5 Years ending on the Original due date of this tender****Details of items supplied by the Bidder:**

Sl. No	Project Name along with name of Customer	Description Item(s) supplied	Qty. (m tons)	Purchase Order No & Date (Copy to be enclosed)	Delivery Date as per Order	Value of Order	Inspection Reports / Dispatch Documents (Copy to be enclosed)	Remarks

Note No. #1

**PROCUREMENT OF STUD NUTS
Pre-Qualification Criteria (Technical)**

Attachment:PQC.pdf

Package Name : BOLTING MATERIALS
PR No : 1900148851

Manufacturers, Authorised Dealers, Agents, Stockists and Traders of Stud Nuts (documentary evidence to be provided), qualified as per the Prequalification criteria laid down below, **are allowed to bid.**

The bid evaluation shall be on Overall L1 basis .The bidder must quote for all the items under the package. Partial quotation shall not be considered.

Qualification Criteria of the Bidder:

The Bidders shall meet the Pre-Qualification Criteria (listed below). Non-compliance to any of the criteria listed below will lead to disqualification of bidder for the subject tender.

1. The bidder should be an established Manufacturer of **Stud nuts** and should have successfully completed Manufacture, Testing and Supply of Stud nuts, according to the material standard **ASTM A193 B7/ASTM A194 2H , ASTM A193 B16/ASTM A194 M Gr.7 etc.**
2. The Bidder should have successfully completed supply of **Stud and Nuts according to material standard as mentioned above in the size range of M12 & above, of cumulative quantity not less than 400 No's** through a single Purchase Order or multiple Purchase Orders in the last 5 years ending on original due date of this tender, with at least one order executed after 01.01.2019.
3. Detailed BOQ of the Stud Nuts supplied, satisfying the criteria laid down above, shall be provided in the format enclosed as Annexure-I, with details like Project & Customer, Description, Quantity of Items supplied, PO details etc. as a minimum for assessing pre-qualification. PO Copies, Inspection Reports and Dispatch documents shall be enclosed for the references provided.
4. The bidder should not have been under suspension for business or blacklisted by any of the BHEL units.

Note No. 01

PPC-1 NAMRUP

BOQ CUM PBF
BOLTING PACKAGE

Attachment: PBF-BOLTING PACKAGE-NAMRUP.pdf

SL. No.	ITEM TYPE	ITEM DESCRIPTION	MATERIAL	BHEL SPEC	FINAL QTY (M/No.s)	UNIT PRICE FIXING FACTOR	BIDDER CONFIRMATION (QUOTED)
1	ST2NT	AS STUD WITH 2 NUTS M27X3X200	ASTM A193 M Gr B16/ ASTM A194 M Gr 7	PY52072	64	0.217	
2	ST2NT	STUD WITH 2 NUTS M16X100	ASTM A193 M Gr B16/ ASTM A194 M Gr 7	PY52072	64	0.040	
3	ST2NT	AS STUD WITH 2 NUTS M 30X200	ASTM A193 M Gr B16/ ASTM A194 M Gr 7	PY52073	64	0.275	
4	ST2NT	AS STUD WITH 2 NUTS M 24X160	ASTM A193 M Gr B16/ ASTM A194 M Gr 7	PY52072	100	0.218	
5	ST2NT	STUD 2 NUTS M16X90	ASTM A193 M B7/ ASTM A194 M 2H	PY52070	60	0.035	
6	ST2NT	STUD 2 NUTS M20X120	ASTM A193 M B7/ ASTM A194 M 2H	PY52070	120	0.140	
7	ST2NT	STUD 2 NUTS M20X130	ASTM A193 M B7/ ASTM A194 M 2H	PY52070	60	0.074	

1.000

NOTES:

- 1) Vendor to Quote Lumpsum Price for the Total Package.
- 2) Bidder to indicate "Quoted" in the column "Bidder's Confirmation" as a confirmation of their bid to the respective item.
- 3) The Bid Evaluation is on Overall L1 Basis. Each and Every item of the Package shall be quoted by the bidder.
Partial offers will not be considered for evaluation and the same are liable for rejection.
- 4) The Total Lump price quoted shall be INCLUSIVE of GST, Freight, Packing & Forwarding and Testing Charges.
- 5) The Total Lump price quoted shall be EXCLUSIVE of Third party inspection (TPI) & Insurance Charges.

Note No. #1

Attachment: BOLTING-SMQP.pdf

 PROJECT ENGINEERING & SYSTEM DIVISION	STANDARD MANUFACTURING QUALITY PLAN						QP. NO.: PESD/QA/ FASTENER/01/18-19							
	PRODUCT: FASTENER						BHEL SPEC: AS PER P.O		REV NO: 00		DATE: 23-02-2019			
									PAGE 1 OF 3					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY				REMARKS
										P	W	V		

1.0 BOUGHT OUT ITEMS													
1.1	FASTENERS	Material batch identification, dimensions and GO & NO-GO check	Major	Visual, dimensional, GO & NO-GO check	Sampling plan IS 1367 : Part 17 (AQL=1, LQ10 = 12, sample size = 32, Ac = 1)	BHEL specification or IS Standard IS 1367 : Part 17	BHEL specification or IS Standard IS 1367 : Part 17	MTC and inspection reports	√	2	2	--	Inspection shall be carried out by main supplier.
2.0 FINAL INSPECTION & TESTING													
2.1	FASTENERS	Visual, Dimensions, GO & NO-GO check	Major	Visual, dimensional, GO & NO-GO check	Sampling plan IS 1367 : Part 17 (AQL=0.65, LQ10 = 25, sample size = 8, Ac = 0)	BHEL Specification /BOQ/ IS Standard	BHEL Specification /BOQ/ IS Standard	Inspection reports	√	2	1	--	
2.2		Chemical & Mechanical Properties, Impact test and Heat Treatment (heat treatment if applicable)	Major	TC Review	One sample per Lot			MTC	√	2	--	1	
LEGEND: P: PERFORM, W: WITNESS, V: TC REVIEW. INDICATE 1 FOR BHEL CQS /BHEL NOMINATED INSPECTION AGENCY/END USER & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.						APPROVED BY  BHEL QA SIGNATURE & STAMP			APPROVED BY -NA- CUSTOMER'S SIGNATURE & STAMP (if applicable)				

Note No. #1

Attachment: BOLTING-SMQP.pdf

 PROJECT ENGINEERING & SYSTEM DIVISION		STANDARD MANUFACTURING QUALITY PLAN						QP. NO.: PESD/QA/ FASTENER/01/18-19						
		PRODUCT: FASTENER						BHEL SPEC: AS PER P.O		REV NO: 00		DATE: 23-02-2019		
										PAGE 2 OF 3				
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V				REMARKS
2.3		PMI#	Major	PMI test	Random			IR/TC	√	2	1	1	# If applicable 10 sets shall be witnessed randomly by "1"	
2.4		Galvanization* (mass of zinc coating Thickness of Coating, embrittlement, adherence, finish appearance, etc)	Major	Measurement	As per specification			IR/TC	√	2	-	1		
2.5		BOM Check	Major	Visual	100%			Inspection reports	√	2	1	--		
3.0 PRESERVATION & PACKING														
3.1	FASTENERS	Packing# and markings	Major	Visual	Random	BHEL Specification	BHEL Specification	Packing List	√	2	--	1	#Seaworthy packing for export orders refer note-5.	

LEGEND: P: PERFORM, W: WITNESS, V: TC REVIEW. INDICATE 1 FOR BHEL CQS /BHEL NOMINATED INSPECTION AGENCY/END USER & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.

APPROVED BY



BHEL QA SIGNATURE & STAMP

APPROVED BY

-NA-

CUSTOMER'S SIGNATURE & STAMP
(if applicable)

Note No. #1

Attachment: BOLTING-SMQP.pdf

 PROJECT ENGINEERING & SYSTEM DIVISION		STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/FASTENER/01/18-19							
						REV NO: 00		DATE: 23-02-2019					
		PRODUCT: FASTENER				BHEL SPEC: AS PER P.O				PAGE 3 OF 3			
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS

Notes:-

1. This Standard MQP should be read along with specification (Latest revision as per PO), approved drawings & approved datasheet.
2. Drawing/datasheet shall prevail over quality plan for contradiction if any.
3. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.
4. **NACE requirement:** For items coming under **NACE category**, all tests, reports, MTC and certificates shall be submitted as per **NACE MR0103** requirements.
5. Seaworthy packing shall be **witnessed** BHEL/BHEL nominated inspection agency for overseas project.

Abbreviations:-

MTC	-	Material Test certificate	TC	-	Test Certificate
NDE	-	Non Destructive Examination	CS	-	Carbon Steel
PMI	-	Positive Material Identification			
SS	-	Stainless Steel			
IR	-	Inspection Report			

LEGEND: P: PERFORM, W: WITNESS, V: TC REVIEW. INDICATE 1 FOR BHEL CQS /BHEL NOMINATED INSPECTION AGENCY/END USER & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	APPROVED BY  BHEL QA SIGNATURE & STAMP	APPROVED BY -NA- CUSTOMER'S SIGNATURE & STAMP (if applicable)
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Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	Attachment: BOLTING SPECS.pdf PY 52 070	
			Rev. No. 01	
			Page 1 of 1	

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STUD WITH TWO NUTS (M12 – M27) STEEL**1.0 DESIGNATION:**

A stud with two nuts of threaded size 20 mm, pitch 2.5 mm, length 100 mm and made of steel shall be designated as

- i) Material Specification Column : PY52070
- ii) Description Column : STUD WITH TWO NUTS M20X100

2.0 MATERIAL:**STUD :** Low alloy steel (ASTM A193 M B7)**NUTS :** Low carbon steel (ASTM A194 M 2H)**3.0 COMPLIANCE WITH NATIONAL STANDARDS:**

3.1 Dimensions and tolerances as per IS 14962 Part 1-2001 (ISO 965-1-1998) (Studs & Nuts). and IS 1364, Part 3-2002 (For Nuts)

3.2 Threads:

Tolerance grade for stud – 6g

Tolerance grade for nuts – 6H

3.3 Heat treatment:

Hardened and Tempered.

3.4 Protective Coating:

Black oxidised.

4.0 INSPECTION:

The stud with two nuts shall be inspected at supplier's works by BHEL Inspector or Third party inspector.

5.0 TEST CERTIFICATES:

Three copies of test certificates of (i) chemical composition, (ii) mechanical test shall be furnished. The test certificates shall be signed by Third Party Inspectors.

6.0 NOTE:

6.1 Studs to this standard would be unplated. User departments wishing to have them plated, would mention the same in the indents.

6.2 For stud with two nuts (M30-M70) refer to standard PY52071 latest revision.

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RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	30.05.2015	FIRST ISSUE	 CH MANOJ	 SRIKANTH G
01	20.09.2018	VARIANT TABLE EXCLUDED	 U PRADEEP	 SRIKANTH G

Refer Doc	LAYOUTS & PIPING ENGINEERING	PREPARED	CHECKED	APPROVED	DATE
		U. PRADEEP	CH. MANOJ	G. SRIKANTH	30.05.15

Note No. #1	Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED	Attachment BOLLING SPECS.pdf
			PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52 071
			TECHNICAL SPECIFICATION	Rev. No. 00
			CS STUD WITH TWO NUTS (M30-M70)	Page 1 of 3

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STUD WITH TWO NUTS (M30 – M70) STEEL

1.0 DESIGNATION:

A stud with two nuts of threaded size 30 mm, pitch 3 mm, length 150 mm and made of steel shall be designated as

- i) Material Specification Column : PY52071
- ii) Description Column : STUD WITH TWO NUTS M30X150

2.0 MATERIAL:

STUD : Low alloy steel (ASTM A193 M B7)

NUTS : Low carbon steel (ASTM A194 M 2H)

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

3.1 Dimensions and tolerances as per IS 14962 Part 1-2001 (ISO 965-1-1998).

3.2 Threads:

Tolerance grade for stud – 6g

Tolerance grade for nuts – 6H

3.3 Heat treatment:

Hardened and Tempered.

3.4 Protective Coating:

Black oxidised.

4.0 INSPECTION:

The stud with two nuts shall be inspected at supplier's works by BHEL Inspector or Lloyds inspector.

5.0 TEST CERTIFICATES:

Three copies of test certificates of (i) chemical composition, (ii) mechanical test shall be furnished. The test certificates shall be signed by M/s Lloyds Inspectors.

6.0 NOTE:

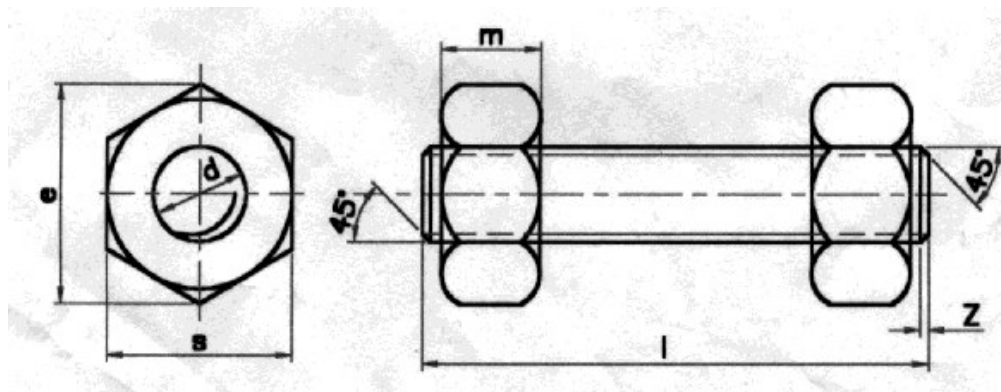
6.1 Studs to this standard would be unplated. User departments wishing to have them plated, would mention the same in the indents.

6.2 For stud with two nuts (M12-M27) refer to standard PY52070 latest revision.

Refer Doc	LAYOUTS & PIPING ENGINEERING	PREPARED	CHECKED	APPROVED	DATE
	PROJECT ENGINEERING & SYSTEMS DIVISION	U. PRADEEP	CH. MANOJ	G. SRIKANTH	30.05.15

Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION CS STUD WITH TWO NUTS (M30-M70)	Attachment BOLLING SPECS.pdf PY 52 071
			Rev. No. 00
			Page 2 of 3



All dimensions are in mm

Nominal Size d	Pitch	Stud		Nut		Component code
		I	Z	s	m	
M30	3	150	3.5	46	25	PY9752071015
		160				PY9752071023
		170				PY9752071031
		180				PY9752071040
		200				PY9752071058
		210				PY9752071066
		230				PY9752071074
		250				PY9752071082
		275				PY9752071090
		300				PY9752071104
		325				PY9752071112
		350				PY9752071120
		375				PY9752071139
		400				PY9752071147
		460				PY9752071155
M33	3	180	3.5	50	29	PY9752071163
		190				PY9752071171
		200				PY9752071180
		210				PY9752071198
		225				PY9752071201
		240				PY9752071210
		250				PY9752071228
		260				PY9752071236
		300				PY9752071244
		350				PY9752071252
		450				PY9752071260
M36	3	180	4.0	55	31	PY9752071279
		200				PY9752071287
		225				PY9752071295

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Note No. #1

Attachment BOLLING SPECS.pdf

FORM NO. #1

Form No:

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BHEL

PE&SD

BHARAT HEAVY ELECTRICALS LIMITED

PROJECT ENGINEERING & SYSTEMS DIVISION

TECHNICAL SPECIFICATION

CS STUD WITH TWO NUTS (M30-M70)

PY 52 071

Rev. No. 00

Page 3 of 3

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M36	3	230	4.0	55	31	PY9752071309					
		240				PY9752071317					
		260				PY9752071325					
		275				PY9752071333					
		300				PY9752071341					
		350				PY9752071350					
		375				PY9752071368					
		400				PY9752071376					
		425				PY9752071384					
		450				PY9752071392					
		500				PY9752071406					
		585				PY9752071414					
		M39				3	225	4.0	60	33	PY9752071422
							250				PY9752071430
275	PY9752071449										
300	PY9752071457										
330	PY9752071465										
350	PY9752071473										
515	PY9752071481										
570	PY9752071490										
M40	3.0	460	4.0	60	33	PY9752071503					
M42	3.0	175	4.5	65	34	PY9752071511					
		250				PY9752071520					
		275				PY9752071538					
		300				PY9752071546					
		325				PY9752071554					
		350				PY9752071562					
		425				PY9752071570					
		460				PY9752071589					
M48	3.0	340	5.0	75	38	PY9752071597					
		360				PY9752071600					
		475				PY9752071619					
		500				PY9752071627					
M52	3	450	5.0	80	42	PY9752071635					
		500				PY9752071643					
		550				PY9752071651					
M56	3	450	5.5	85	45	PY9752071660					
		500				PY9752071678					
		550				PY9752071686					
M64	3	510	6.0	95	51	PY9752071694					
		550				PY9752071708					
M70	3	560	6.0	103	56	PY9752071716					

Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	ATTACHMENT BOLLING SPECS.pdf PY 52 072
		TECHNICAL SPECIFICATION	Rev. No. 01
		AS STUD WITH TWO NUTS (M12-M27)	Page 1 of 4

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STUD WITH TWO NUTS (M12 – M27) STEEL

1.0 DESIGNATION:

A stud with two nuts of threaded size 20 mm, length 100mm, coarse pitch made of Steel shall be designated as:

- Material specification column – PY52072.
- Description column-STUD WITH TWO NUTS (AS) M20X100

2.0 MATERIAL:

Stud: Low alloy steel ASTM A193 M Gr B16

Nuts: Low alloy steel ASTM A194 M Gr 7

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

3.1 Dimensions, tolerances & General Requirements:

To this standard PY52072.

& General Requirements

3.2 Threads: Pitch-coarse to IS:4218 (Pt.2)

Tolerance quality – Medium.

Tolerance class 6g.

3.3 Protective Coating: Black oxidized

4.0 INSPECTION:

The stud with two nuts shall be inspected at supplier's works by Lloyds/BHEL inspector.

5.0 TEST CERTIFICATES:

Three copies of test certificates covering the results of chemical analysis and mechanical Tests shall be furnished. The test certificates shall be signed by M/s.Lloyds Inspectors.

6.0 NOTE:

6.1 For stud with two nuts (M30-M70) refer to standard PY52073.

6.2 For screw threads, general (Metric) refer standard AA 023 18 00.

6.3 For tolerance grade, position and class, refer standard AA 023 02 01.

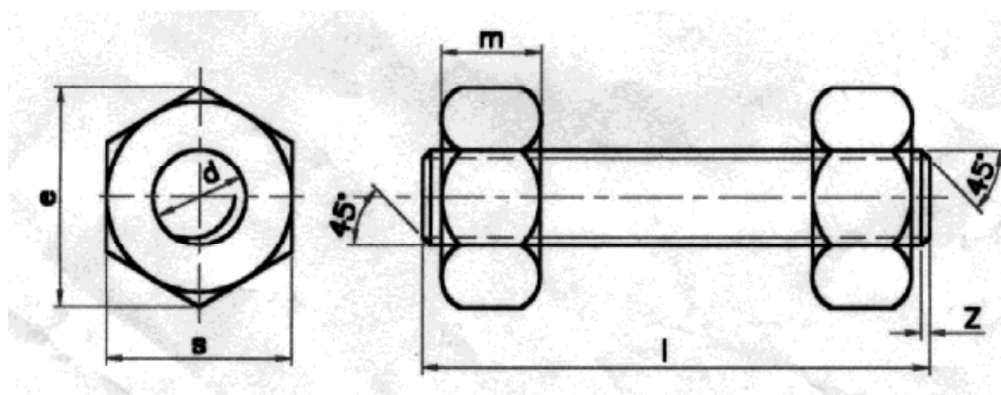
6.4 Studs to this standard would be unplated. User depts wishing to have plated, studs would have to get them plated.

6.5 Weights given in this standards are for general reference only and are not meant for commercial transactions.

Refer Doc	LAYOUTS & PIPING ENGINEERING	PREPARED	CHECKED	APPROVED	DATE
		U. PRADEEP	CH.MANOJ	G. SRIKANTH	30.05.15

Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION AS STUD WITH TWO NUTS (M12-M27)	Attachment BOLLING SPECS.pdf PY 52 072
			Rev. No. 01
			Page 2 of 4



All dimensions are in mm

NOMINAL SIZE		NUT				STUD		z	Wt Kg/ 100 0 Pcs	Component Code
d _{xp}	I	s	e	TOLERANCE (6H)	TOLERANCE (6g)					
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M12x1.75	60	22	24.49	11.063	10.863	10.829	10.679	1.75	113	PY9752072011
	80								132	PY9752072020
	90								141	PY9752072038
	100								160	PY9752072046
M16x2.0	40	27	30.14	14.913	14.701	14.663	14.503	2.0	184	PY9752072054
	90								256	PY9752072062
	100								272	PY9752072070
	110								287	PY9752072089
	120								303	PY9752072097
	130								319	PY9752072100
	140								335	PY9752072119
	150								351	PY9752072127
M20x2.5	60	32	35.72	18.600	18.376	18.334	18.164	2.5	341	PY9752072135
	70								365	PY9752072143
	80								390	PY9752072151
	90								415	PY9752072160
	100								439	PY9752072178
	110								464	PY9752072186
	120								489	PY9752072194
	130								513	PY9752072208
	140								538	PY9752072216
	150								550	PY9752072224
	160								587	PY9752072232
	170								612	PY9752072240
	180								637	PY9752072259
	190								661	PY9752072267
	200								686	PY9752072275
	225								748	PY9752072283
	250								809	PY9752072291
	275								871	PY9752072305
	300								933	PY9752072313

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Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	ATTACHMENT BOLLING SPECS.pdf PY 52 072	
		TECHNICAL SPECIFICATION		Rev. No. 01
		AS STUD WITH TWO NUTS (M12-M27)		Page 3 of 4

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NOMINAL SIZE		NUT				STUD		z	Wt Kg/ 100 Pcs	Component Code
d _{xp}	I	s	e	TOLERANCE (6H)		TOLERANCE (6g)				
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M22x2.5	100	32	35.72	18.600	18.376	18.334	18.164	2.5	549	PY9752072321
	120								608	PY9752072330
	130								638	PY9752072348
	140								668	PY9752072356
	150								698	PY9752072364
	160								728	PY9752072372
	170								758	PY9752072380
	180								788	PY9752072399
	190								817	PY9752072402
M22x2.5	200	35	38.54	20.600	20.376	20.334	20.164	2.5	847	PY9752072410
	210								877	PY9752072429
	225								922	PY9752072437
M24x3.0	100	36	39.98	22.136	22.051	22.003	21.803	3.0	630	PY9752072445
	110								665	PY9752072453
	120								701	PY9752072461
	130								736	PY9752072470
	140								772	PY9752072488
	150								807	PY9752072496
	160								843	PY9752072500
	170								878	PY9752072518
	180								913	PY9752072526
	190								949	PY9752072534
	200								984	PY9752072542
	225								1073	PY9752072550
	250								1162	PY9752072569
	275								1251	PY9752072577
	300								1339	PY9752072585
	325								1427	PY9752072593
	350								1515	PY9752072607
M27x3.0	100	41	45.63	25.316	25.051	25.003	24.803	3.0	853	PY9752072615
	120								942	PY9752072623
	130								987	PY9752072631
	140								1032	PY9752072640
	150								1077	PY9752072658
	160								1122	PY9752072666
	170								1167	PY9752072674
	180								1212	PY9752072682
	190								1257	PY9752072690
	200								1302	PY9752072704
	225								1415	PY9752072712
	230								1437	PY9752072720
	240								1482	PY9752072739
	250								1527	PY9752072747
	275								1640	PY9752072755
	300								1752	PY9752072763
	325								1865	PY9752072771
350	1977	PY9752072780								
375	2090	PY9752072798								
400	2202	PY9752072801								

Note No. #1

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	Attachment BOLTING SPECS.pdf PY 52 072	
		TECHNICAL SPECIFICATION		Rev. No. 01
		AS STUD WITH TWO NUTS (M12-M27)		Page 4 of 4

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NOMINAL SIZE		NUT				STUD		z	Wt Kg/ 100 0 Pcs	Component Code
dxp	I	s	e	TOLERANCE (6H)	TOLERANCE (6g)					
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M27x3.0	500	41	45.63	25.316	25.051	25.003	24.803	3.0	2652	PY9752072810

RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	30.05.2015	FIRST ISSUE	PRADEEP	 SRIKANTH G
00	22.10.2016	GRADE OF NUT CHANGED TO GR 7	 IMRAN	 SRIKANTH G

Note No. #1

No. #1	Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED		Attachment BOL	TING SPECS.pdf	
			PROJECT ENGINEERING & SYSTEMS DIVISION		PY 52 073		
			TECHNICAL SPECIFICATION				Rev. No. 00
			AS STUD WITH TWO NUTS (M30-M70)				Page 1 of 4

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STUD WITH TWO NUTS (M30 – M70) STEEL

1.0 DESIGNATION:

A stud with two nuts of threaded size 30 mm, length 150mm, fine pitch made of Steel shall be designated as:

- Material specification column – PY52073.
- Description column- STUD WITH TWO NUTS M30 x 3 x 150 – ST

2.0 MATERIAL:

Stud: Low alloy steel ASTM A193 M B16 (AA 10664)

Nuts: Low alloy steel ASTM A194 M Gr 3 (AA 10620)

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

3.1 Dimensions, Tolerances & General Requirements:

To this standard PY52072.

3.2 Material:

Low alloy steel as per ASTM A 193 M B16/Low alloy steel as per ASTM A 194 M Gr3.

3.3 Threads:

Pitch coarse to IS: 4218(Pt –2)

Tolerance Quality – Medium. Tolerance class – 6g.

3.4 Protective Coating:

Black oxidised.

4.0 INSPECTION:

The stud with two nuts shall be inspected at supplier's works by Lloyds/BHEL inspector.

5.0 TEST CERTIFICATES:

Three copies of test certificates covering the results of chemical analysis and mechanical Tests shall be furnished. The test certificates shall be signed by M/s.Lloyds Inspectors.

6.0 NOTE:

6.1 For stud with two nuts (M12-M27) refer to standard PY52072.

6.2 For screw threads, general (Metric) refer standard AA 023 18 00.

6.3 For tolerance grade, position and class, refer standard AA 023 02 01.

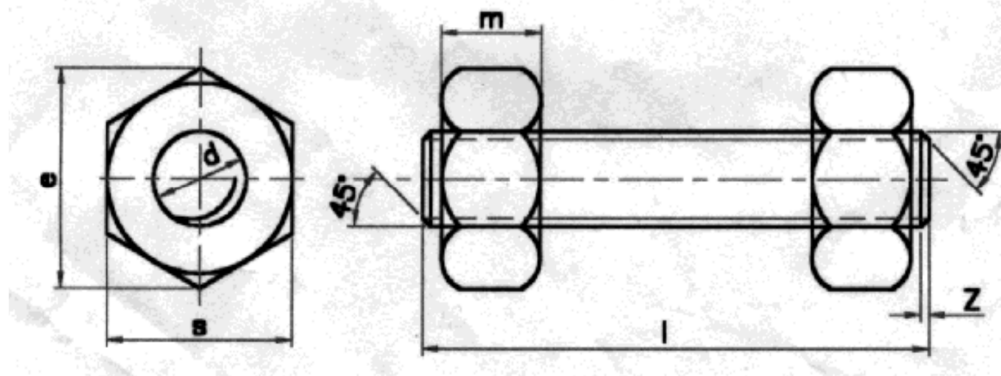
6.4 Studs to this standards would be unplated. User depts. wishing to have plated, studs would have to get them plated.

6.5 Weights given in this standards are for general reference only and are not meant for commercial transactions.

Refer Doc	LAYOUTS & PIPING ENGINEERING	PREPARED	CHECKED	APPROVED	DATE
		U. PRADEEP	CH. MANOJ	G. SRIKANTH	07.05.15

Note No. #1

Form No:	 BHEL PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION		Attachment BOLLING SPECS.pdf
		TECHNICAL SPECIFICATION		Rev. No. 00
		AS STUD WITH TWO NUTS (M30-M70)		Page 2 of 4



All dimensions are in mm

NOMINAL SIZE		NUT				STUD		z	WtKg/1000 Pcs	Component Code
d _{xp}	I	s	e	TOLERANCE (6H)		TOLERANCE (6g)				
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M30x3	150	46	51.28	28.316	28.051	28.003	27.803	3.5	1405	PY9752073018
	160								1475	PY9752073026
	170								1544	PY9752073034
	180								1614	PY9752073042
	190								1684	PY9752073050
	200								1751	PY9752073069
	210								1801	PY9752073077
	225								1841	PY9752073085
	230								1846	PY9752073093
	250								1901	PY9752073107
	260								1971	PY9752073115
	270								2041	PY9752073123
	275								2076	PY9752073131
	300								2235	PY9752073140
	325								2373	PY9752073158
	350								2512	PY9752073166
	375								2687	PY9752073174
M33x3	180	50	55.8	31.316	31.051	31.003	30.803	3.5	1938	PY9752073182
	190								2005	PY9752073190
	200								2072	PY9752073204
	210								2139	PY9752073212
	225								2240	PY9752073220
	240								2340	PY9752073239
	250								2407	PY9752073247
M36x3	180	55	61.31	34.316	34.051	34.003	33.803	4.0	2412	PY9752073255
	200								2573	PY9752073263
	225								2772	PY9752073271
	230								2812	PY9752073280
	240								2891	PY9752073298
	250								2971	PY9752073301
	260								3051	PY9752073310

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Note No. #1

Form No:	 BHEL PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	Attachment BOLLING SPECS.pdf PY 52 073	
		TECHNICAL SPECIFICATION		Rev. No. 00
		AS STUD WITH TWO NUTS (M30-M70)		Page 3 of 4

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NOMINAL SIZE		NUT				STUD		z	WtK g/100 Pcs	Component Code
d _{xp}	I	s	e	TOLERANCE (6H)		TOLERANCE (6g)				
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M36x3	275	55	61.31	34.316	34.051	34.003	33.803	4.0	3171	PY9752073328
	300								3370	PY9752073336
	325								3565	PY9752073344
	350								3760	PY9752073352
	375								3965	PY9752073360
	400								4169	PY9752073379
	425								4368	PY9752073387
	450								4568	PY9752073395
M39x3	200	60	66.96	37.316	37.051	37.003	36.803	4.0	3137	PY9752073409
	225								3371	PY9752073417
	250								3605	PY9752073425
	275								3839	PY9752073433
	300								3839	PY9752073441
	515								7300	PY9752073450
M42x3	175	65	72.61	40.316	40.051	40.003	39.803	4.5	3775	PY9752073468
	250								4318	PY9752073476
	275								4598	PY9752073484
	300								4870	PY9752073492
	350								5413	PY9752073506
	375								5956	PY9752073514
	400								6499	PY9752073522
	425								7042	PY9752073530
	450								7585	PY9752073549
M48x3	340	75	83.91	46.331	46.051	46.003	45.791	5.0	5278	PY9752073557
	350								6145	PY9752073565
	360								7012	PY9752073573
	375								8313	PY9752073581
	425								10865	PY9752073590
M52x3	350	80	89.56	50.331	50.051	50.003	49.791	5.0	8826	PY9752073603
	360								8980	PY9752073611
	375								9211	PY9752073620
	400								9644	PY9752073638
	425								10029	PY9752073646
	450								10478	PY9752073654
	475								10863	PY9752073662
	500								11248	PY9752073670
	525								11663	PY9752073689
	550								12018	PY9752073697
	575								12403	PY9752073700
	600								12788	PY9752073719
M56x3	450	85	95.07	54.331	54.052	54.003	53.791	5.5	12488	PY9752073727
	475								12926	PY9752073735
	500								13363	PY9752073743
	525								13801	PY9752073751
	550								14238	PY9752073760
	575								14676	PY9752073778
	600								15113	PY9752073786

Note No. #1

Form No:	 BHEL PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	Attachment BOLLING SPECS.pdf PY 52 073	
		TECHNICAL SPECIFICATION		Rev. No. 00
		AS STUD WITH TWO NUTS (M30-M70)		Page 4 of 4

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NOMINAL SIZE		NUT				STUD		z	WtK g/10 00 Pcs	Component Code
d _{xp}	I	s	e	TOLERANCE (6H)	TOLERANCE (6g)					
				PCD		PCD				
				MAX.	MIN.	MAX.	MIN.			
M64x3	500	95	106.4	62.331	62.051	62.003	61.791	6	16460	PY9752073794
	510								16691	PY9752073808
	525								17038	PY9752073816
	550								17615	PY9752073824
	575								18193	PY9752073832
	600								18770	PY9752073840
	625								19348	PY9752073859
	650								19925	PY9752073867
	675								20503	PY9752073875
	700								21080	PY9752073883
	750								22235	PY9752073891

Note No. #1 OSP-004/A2, ESP-003		PROJECT ENGINEERING & SYSTEMS DIVISION OVER ALL CHECKLIST FOR PURCHASE REQUISITION	Attachment: ECL-BOLTING PACKAGE.pdf ESP-003-05A
			Rev. No. 01
			Page 1 of 1

Annexure-1

Project: **APGCL NAMRUP**PR No: **1900148851**Item Description: **BOLTING PACKAGE**PR Release Date: **29.11.2022**Engineering Check List for issue of Technical Specification:

Indenter to confirm whether the following (wherever applicable) are ensured in (or along with) the Purchase Requisition/ Technical Specification :			
Sl. No.	Description	Yes /No	Remarks
1	Price Estimates (EFC) in sealed envelope have been sent to Purchase department.	NA	
2	Provision available in the project estimate (AS-11).	YES	Available under A3
3	Approval of Quality received on Technical Specifications.	YES	
4	Reference no. of customer vendor list for the item, if applicable.	-	
5	Requirement of Commissioning Spares is included in Technical Specification.	NO	Not applicable
6	Requirement of Initial Spares is included in Technical Specification for evaluation along with Main package/Equipment: i) Mandatory Spares as defined in Customer's Specification / Initial Spares W.O. ii) O&M Spares as defined in Customer's Specification / Initial Spares W.O.	NO	Not applicable
7	Separate PR is released for Mandatory spares, if applicable.	NO	Not applicable
8	Evaluation Criterion finalized by indenter / purchase officer. Overall L1 basis ☒ Item Level L1 basis ☐	-	Signature of: Indenter / Purchase officer
9	Information / data / Interface exchange details between BHEL and vendor along with schedules is defined in the Specification.	YES	-
10	Any Erection, commissioning or civil works included in vendor's scope. If yes, mention in remarks.	NO	Not applicable
11	Optional prices (item wise) of Critical Spares / Recommended O&M Spares have been included in the price format.	NO	Not applicable
12	Optional prices (item wise) for Supervision Services of E&C included in the price format.	NO	Not applicable

Signature and Seal of HOS(Engg.)

Signature and Seal of Indenter

Date:

Date: 29.11.2022

Note No



Attachment:1900148851.pdf

PURCHASE REQUISITION

PR No:1900148851 Project Type:Main Orders

PRINTED ON: 29.11.2022

Created On:29.11.2022

DOC TYPE: ZTPS - Third Party(DD) Itm

PLANT DES: PESD MECHANICAL

TOTAL ESTIMATED/PSL VALUE Code:A

ITEM NO: 10 DU: DD PURCHASE GROUP: T7J ST.LOC.NO: DD99
 MATERIAL No: PY9752011306 FSN Ind: MATERIAL TYPE: ZSUD Mechanical Items
 HSN NO : 73181500
 ITEM QTY:1.000 MU: SET GWT/UNIT: 500.000 KG
 SPEC No:PY52011 SPEC-REV: 15 SPEC-VAR:30 NWT/UNIT:500.000 KG
 DRAWING NO:NA DRG-VAR: DRG-REV:
 MATERIAL CATEGORY No: PE.MP.512 LPO/EST/MAP Unit Value Code: A
 MATERIAL_CRITICALITY:
 MATERIAL ATTESTATION :
 MANUFACTURER PART No: LPO/EST/MAP Total Value in Code:A
 SHORT DESCRIPTION:BOLTING PACKAGE-NAMRUP
 LONG DESCRIPTION:
 BLCKD IND: REASON TO BLCK: Stk Avl(PrntDt): Pend.Issues(PrntDt): Last Chgd
 0.000 0.000 On:29.11.2022

REMARKS:

WBS Element	PART	DELIVERY DATE	L2-Date	QUANTITY
P-1085149900-38607	38607002	28.01.2023	14.01.2023	1.000

SUPPLIER NAME:

ENGG REMARKS:

PROJ DEF	PROJECT DESC	CUSTOMER NAME
M-DA-1201	STG Restoration work of NRPP-APGCL TWBS-STG Restoration work of NRPP-APGCL UNIT	STG Restoration work of NRPP

WORKORDER	ISSUE-DATE	DELY-DT	CAV	DD ED	Import Duties	FREIGHT
W-1085149900	15.09.2022	14.01.2023	No	No		BHEL Scope

Legend CAV: Customer Approved Vendor list ,FSN Ind:Fast Slow Non Moving Indicator

DD_ED: ED/ST reimbursement applicability

SOURCE OF SUPPLY:

REMARKS:

REQUISITIONER: Imran Ahmad

RELEASED BY:

On:

Material Code	Material Description	PR Qty in pipeline	PO Qty in pipeline	Stocks in stores	As on Date
PY9752011306	BOLTING PACKAGE-NAMRUP				29.11.2022

Note No



Attachment:PR 1900148851 Released.pdf

PURCHASE REQUISITION

PR No:1900148851 Project Type:Main Orders

PRINTED ON: 29.11.2022

Created On:29.11.2022

DOC TYPE: ZTPS - Third Party(DD) Itm

PLANT DES: PESD MECHANICAL

TOTAL ESTIMATED/PSL VALUE Code:A

ITEM NO: 10 DU: DD PURCHASE GROUP: T7J ST.LOC.NO: DD99
 MATERIAL No: PY9752011306 FSN Ind: MATERIAL TYPE: ZSUD Mechanical Items
 HSN NO : 73181500
 ITEM QTY:1.000 MU: SET GWT/UNIT: 500.000 KG
 SPEC No:PY52011 SPEC-REV: 15 SPEC-VAR:30 NWT/UNIT:500.000 KG
 DRAWING NO:NA DRG-VAR: DRG-REV:
 MATERIAL CATEGORY No: PE.MP.512 LPO/EST/MAP Unit Value Code: A
 MATERIAL CRITICALITY:
 MATERIAL ATTESTATION :
 MANUFACTURER PART No: LPO/EST/MAP Total Value in Code:A
 SHORT DESCRIPTION:BOLTING PACKAGE-NAMRUP
 LONG DESCRIPTION:
 BLCKD IND: REASON TO BLCK: Stk Avl(PrntDt): Pend.Issues(PrntDt): Last Chgd
 0.000 0.000 On:29.11.2022

REMARKS:

WBS Element	PART	DELIVERY DATE	L2-Date	QUANTITY
P-1085149900-38607	38607002	28.01.2023	14.01.2023	1.000

SUPPLIER NAME:

ENGG REMARKS:

PROJ DEF	PROJECT DESC	CUSTOMER NAME
----------	--------------	---------------

SPECIAL REMARKS

M-DA-1201	STG Restoration work of NRPP-APGCL	STG Restoration work of NRPP
	TWBS-STG Restoration work of	
	NRPP-APGCL UNIT	

WORKORDER	ISSUE-DATE	DELY-DT	CAV	DD_ED	Import Duties	FREIGHT
W-1085149900	15.09.2022	14.01.2023	No	No		BHEL Scope

Legend CAV: Customer Approved Vendor list ,FSN Ind:Fast Slow Non Moving Indicator

DD_ED: ED/ST reimbursement applicability

SOURCE OF SUPPLY:

REMARKS:

REQUISITIONER: Imran Ahmad

RELEASED BY: SRIKANTH G

On:29.11.2022

Material Code	Material Description	PR Qty in pipeline	PO Qty in pipeline	Stocks in stores	As on Date
PY9752011306	BOLTING PACKAGE-NAMRUP				29.11.2022

