

 BHEL Ranipet	TECHNICAL DELIVERY CONDITION FOR COLD DRAWN COILED SHEETS TO SPECIFICATION ASTM B575 UNS N 10276	DOC No:	TDC: RTG: 477
		Effective Date:	09/07/2018
		Rev:	00
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1.0	Scope																		
1.1	This TDC specifies the additional requirements for the delivery of cold drawn sheets of 0.1mm/0.25mm thickness conforming to ASTM B575 UNS N10276 to the latest edition.																		
1.2	The size and Quantity shall be as specified in the Enquiry/ Purchase order																		
2.0	Chemical composition and process																		
2.1	The material shall be made by any one of the process allowed in the specification and chemical composition shall comply with the specification requirements																		
2.2	Final sheet thickness shall be made by cold drawing with minimum reduction of thickness of about 20% for getting required stiffness																		
3.0	Dimensional tolerances																		
3.1	The supply of sheets is in continuous coil form, the following tolerance shall apply																		
	<table> <tr> <td>a) Thickness</td><td>As per Enquiry/ PO</td></tr> <tr> <td>b) Thickness Tolerance</td><td>± 0.03 for 0.1mm thickness ± 0.05 for 0.25mm thickness</td></tr> <tr> <td>c) Width</td><td>+ 0.5mm, - 0mm</td></tr> <tr> <td>d) Flatness</td><td>1mm/meter (Max) for 0.1mm thickness, when uncoiled and stretched 1.5mm/meter (Max) for 0.25mm thickness, when uncoiled and stretched</td></tr> <tr> <td>e) Finish</td><td>No.2 Finish as per ASTM B906 (Latest) on both sides</td></tr> <tr> <td>f) No of waves</td><td>3 per meter (Max)</td></tr> <tr> <td>g) Camber</td><td>3mm/ 2 meter (Max) to Max.5mm for any length (To be measured as per Note of Table A1.11 of ASTM B906 (Latest)</td></tr> <tr> <td>h) Coil ID</td><td>200mm (minimum) to 250mm (maximum)</td></tr> <tr> <td>i) Coil weight</td><td>50 kgs, ± 5 kgs (Max)</td></tr> </table>	a) Thickness	As per Enquiry/ PO	b) Thickness Tolerance	± 0.03 for 0.1mm thickness ± 0.05 for 0.25mm thickness	c) Width	+ 0.5mm, - 0mm	d) Flatness	1mm/meter (Max) for 0.1mm thickness, when uncoiled and stretched 1.5mm/meter (Max) for 0.25mm thickness, when uncoiled and stretched	e) Finish	No.2 Finish as per ASTM B906 (Latest) on both sides	f) No of waves	3 per meter (Max)	g) Camber	3mm/ 2 meter (Max) to Max.5mm for any length (To be measured as per Note of Table A1.11 of ASTM B906 (Latest)	h) Coil ID	200mm (minimum) to 250mm (maximum)	i) Coil weight	50 kgs, ± 5 kgs (Max)
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4.0	Heat Treatment																		
4.1	The sheets will be supplied in cold drawn condition without any heat treatment																		
5.0	Mechanical Test																		
5.1	Testing shall be done for each melt as per ASTM E8 and acceptance norms are given below																		
	<table> <tr> <td>a) Ultimate Tensile strength</td><td>182000psi/ 1255Mpa (Max)</td></tr> <tr> <td>b) Hardness of finished sheet</td><td>330 to 380VHN</td></tr> </table>	a) Ultimate Tensile strength	182000psi/ 1255Mpa (Max)	b) Hardness of finished sheet	330 to 380VHN														
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6.0	Freedom from defects																		
6.1	All sheets shall be free from harmful defective like cracks, lamination, scarabs etc. The surface shall be free from scales, rust, pitting , wrinkles																		
6.2	Repair on finished coil is prohibited																		
7.0	Finish																		
7.1	The edges of coils shall be slit without fish tails and kinks. The coils should not contain any weld seam.																		
8.0	Marking																		
8.1	Each coil shall be identified by Tag and also permanent stickers at ID and OD of the coil. The details shall be as given below, a) Coil number b) Specification c) Size (Thickness x width) d) Heat number e) Weight of coil in Kgs f) Length of coil in meter g) PO number h) Manufacturer's identification																		

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9.0	Packing and Dispatch		
9.1	It is the responsibility of the supplier to ensure that no damage occurs during transit.		
9.2	Each coil shall be rigidly wrapped with gum tape so as to cover the entire coil and packed in polythene cover.		
9.3	Coils shall be packed in a wooden box as per ASTM A700. (Packing methodology enclosed)		
10.0	Inspection and Certification		
10.1	All tests shall be complied as per the specification for each heat and dimensional reports containing all elements of cl.3.1 shall be furnished for our verification. Despatch clearance will be issued after verification of reports and is mandatory before effecting despatch to BHEL stores.		
10.2	The test certificates shall be furnished with the following details legibly in English language only a) BHEL purchase order number b) Test certificate number c) Specification and Grade with applicable year of code d) PO quantity and Size e) Melt number f) Chemistry (Melt wise) g) Mechanical Test results- UTS and Hardness h) Coil number and weight i) Process of manufacturing with amount of cold reduction		
11.0	End use		
11.1	The coils are intended for manufacturing flexible seals for Gates and Dampers for the purpose of isolation of Hot/ Cold Air/ Flue gas.		

PACKING METHODOLOGY



Coils wrapped through eye and kept in the solid wooden box kept on a platform with all side packing inside a polythene cover.



Coils fully covered by polythene cover



Full wooden box with steel wrapping all around.

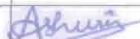


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RECORD OF REVISIONS

REV. NO	Clause revised	Details of revision	Date
TDC:O:304			
00	--	Original Issue	01.04.1994
01	3.1, 5.1, 8.1	TDC requirements are reviewed fully in consultation with Engineering, MPL, purchase, QA & QC (proc). Correction in clauses mentioned and in other clauses minor editorial correction done.	08.06.2010
TDC:RTG:477			
00	3.1	TDC:O:304 changed to TDC:RTG:477 to suit BAP, Ranipet's numbering scheme. TDC requirements are reviewed fully in consultation with Engineering, MPL, Purchase, QA & QC (Proc). Correction in clause 3.1 based on feedback from MPL. Packing methodology photos added for better clarity in packing	06.07.2018

Prepared by	Reviewed by		Signature	Approved by
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