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Product Standard
for
1300 – METALIZED TUBING

Written By: *Brett Schultz* Date: 4/22/10
Product Development Engineer

Reviewed By: *Tom Spalby* Date: 4/28/10
Quality Manager - Aurora

Mark Tabbey Date: 4/28/10
Manufacturing Engineering Manager - Aurora

Olivier Mahieu Date: 4/28/10
Operations Manager - Gembloux

Damien Conwie Date: 4/28/10
Engineering - Gembloux

Approved By: *Jason Stark* Date: 4/28/10
Product Development Supervisor - Aurora

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DESCRIPTION

Eaton's 1300 tubing is constructed from aluminum tape coated on both sides with a co-polymer adhesive film that provides a sealed overlapping seam. It is finished with a high density polyethylene jacket that is bonded to the aluminum tape. Tube is designed to operate in temperatures ranging from -40°F to 175°F (-40°C to 80°C).

PRODUCT IDENTIFICATION

The product is identified by the marking that appears longitudinally on the cover of the product. The standard ink color is white. The text of 1300 standard tube is marked as shown in the following example: (Ref: ES 70 and ES 100)

EATON**SYNFLEX**1300**(Size)*O.D.*****lot #

Note: Marking text repeat less than 1 meter. (Lot # allow plant identification)

Jacket Color : Black is standard.

Grey, blue and red are also available upon special request. Please consult factory if other colors are required.

PRODUCT TECHNICAL DATA

Table 1
Physical Properties - Dimensional

Part Number	Wall Thickness ¹	O.D. Nominal	O.D. Tolerance	I.D. Nominal	I.D. Tolerance	T.I.R.
MAL6-25	1.05 mm	6 mm	-0.28 mm +0.13 mm	3.92 mm *		
MAL1/4-75-IMP	0.040"	0.250"	+0.005" - 0.011"	0.170"	+ 0.006" - 0.006"	0.014" Max.
MAL8-25	1.35 mm	8 mm	-0.28 mm +0.13 mm	5.3 mm *		
MAL3/8-75-IMP	0.062"	0.375"	+0.006" - 0.011"	0.250"	+ 0.006" - 0.006"	0.018" Max.
MAL10-25	1.85 mm	10 mm	-0.3 mm +0.15 mm	6.2 mm *		
MAL12-25	1.935 mm	12 mm	-0.3 mm +0.15 mm	8.14 mm *		
MAL1/2-75-IMP	0.062"	0.500"	+0.006" - 0.011"	0.380"	+ 0.006" - 0.006"	0.018" Max.

*For reference only

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Table 2
Physical Properties – Installation Data

Part Number	Minimum Bend Radius	Nominal Tensile Strength	Maximum Pulling Strength	Nominal Crush Force to Achieve 50% Collapse ²	Net Weight Per Length
MAL6-25	19 mm			135 kg	2 kg/100 m
MAL1/4-75-IMP	1-1/2"	120 lbs.	35 lbs.	300 lbs.	1.6 lbs./100 ft.
MAL8-25	25 mm			150 kg	3.2 kg/100 m
MAL3/8-75-IMP	2-1/4"	220 lbs.	70 lbs.	550 lbs.	2.9 lbs./100 ft.
MAL10-25	32 mm			220 kg	5.7 kg/100 m
MAL12-25	40 mm			180 kg	7.5 kg/100 m
MAL1/2-75-IMP	3-1/4"	310 lbs.	85 lbs.	450 lbs.	4.1 lbs./100 ft.

- '1' Total wall cross-section, including jacket, aluminum and inner lining.
- '2' 2 ¼" plate at 1"/min rate of collapse
- 'X' Length Designator: 2 = 100 feet, 3 = 250 feet, 4 = 500 feet, 5 = 1,000 feet

Table 3
Physical Properties – Nominal Burst Pressure (psi) vs. Temperature

Part Number	75°F	100°F	125°F	150°F	175°F ¹
MAL6-25	115 Bar				
MAL1/4-75-IMP	1850	1650	1600	1350	1200
MAL8-25	115 Bar				
MAL3/8-75-IMP	1750	1550	1450	1400	1200
MAL10-25	115 Bar				
MAL12-25	98 Bar				
MAL1/2-75-IMP	1450	1100	1050	1000	900

'1' Maximum recommended service temperature due to proximity of melt temperature of adhesive coating on tape.

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Table 4
Recommended Maximum Working Pressure (psi) vs. Temperature

Note: 5:1 safety factor to burst pressures for imperial size
4:1 minimum safety factor to burst pressure for metric size

Part Number	75°F	100°F	125°F	150°F	175°F ¹
MAL6-25	28.8 Bar			17.5 Bar	12 Bar
MAL1/4-75-IMP	370	330	320	270	240
MAL8-25	28.8 Bar			17.5 Bar	12 Bar
MAL3/8-75-IMP	350	310	290	280	240
MAL10-25	28.8 Bar			17.5 Bar	12 Bar
MAL12-25	24.5 Bar			11 Bar	9.5 Bar
MAL1/2-75-IMP	290	220	210	200	180

¹ Maximum recommended service temperature due to proximity of melt temperature of adhesive coating on tape.

RECOMMENDED CUTTING METHODS

Make clean, square cut across tube with utility knife or other suitable cutting implement. (Suggest: Dawn Industries KwikCut™ knife, Greenlee 56275 or Malco Tools TC400).

QUALIFICATION TESTS

To meet the qualification requirements for this product standard, the SYNFLEX 1300 tubing that is produced using this standard shall comply with the following tests and requirements:

Dimensional Tests and Visual Inspection:

All SYNFLEX 1300 tube shall comply with the dimensions detailed in Table 1. All tubes shall be visually examined for Jacket defects and to see that the identification has been properly applied.

Burst test (at 23°C):

This test shall be conducted in accordance to the latest issue of SAE J343. The minimum burst pressures are listed in the Table 2.

ALL OTHER DATA ARE ONLY INFORMATIVE

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INSPECTION TESTS

The following tests are to be performed on samples representing each production of SYNFLEX 1300 tubing. Requirements shall be the same as the corresponding qualification tests:

- Dimensional Tests and Visual Inspection
- Burst test

PRODUCT ADVANTAGES

Self-Supporting: The “built-in conduit” feature of the 1300 construction allows the tubing to be run overhead without the aid of conduit.

Formability: 1300 products form easily by hand into uniform bends. (For recommended minimum bend radius, see Table 2 above)

Waterproof, Vapor-Tight Barrier: The bonded jacket and sealed overlap provides a moisture-proof, vapor-tight product ideal for underground burial.

Corrosion Resistant: High density polyethylene jacket and copolymer film inside and outside of the aluminum core offers exceptional corrosion resistance.

Offers excellent protection against thermal and environmental degradation.

Offers excellent protection against thermal and environmental degradation. For severe exposure to UV, black version is recommended.

Due to its protection strength and corrosion resistance, SYNFLEX 1300 offers excellent direct burial characteristics.

TUBE ASSEMBLY INFORMATION

Sealing between fitting and SYNFLEX 1300 has to be made on the outside diameter of the SYNFLEX 1300® tube

Fittings:

EATON recommends the use of compression fittings for leakage free connection. Push-In fittings may also be used.

Installation recommendations:

Make clean, square cut across tube with utility knife.
Mount the fittings without oil.