FIBERBOND® Fiberglass Piping Systems Series 20HV-C

Description:

The FIBERBOND® 20HV-C Fiberglass Piping Series is a fiberglass reinforced pipe product manufactured by filament winding utilizing isophthalic polyester and epoxy vinyl ester resins and a 20-mil (0.50mm) liner, suitable for design pressures up to 200 psig (13.8 bar) and temperatures up to 150F (65c). The 20HV-C series is identical to 20HV except that it has an electrically conductive exterior that may be grounded to earth. The 20HV-C standard product is available in 1" to 60" (25mm - 1524mm) nominal inside diameters.

Applications:

Design Range:	200 psig (13.8 bar) up to 12in. and 150F (65c) (with standard fittings) 150psig (10.3 bar) up to 24in. 100psig (6.9 bar) up to 36in. 50psig (3.5 bar) up to 60in.
Applications:	Seawater systems requiring an electrically conductive exterior

Piping Specifications:

Manufacture:	Contact molded and filament wound 1" - 2" (25mm) Filament wound 3" - 60" (76mm - 1524mm)
Construction:	Isophthalic polyester and epoxy vinyl ester resins 20 mil (0.02in./0.50mm) C-Veil reinforced resin rich liner 55degree wind pattern
Delivery:	Random lengths or part of a shop-fabricated system

Fittings Specifications:

Manufacture:	Contact molded 1" - 60" (25mm - 1524mm)
Dimensions:	Per FIBERBOND® Fittings Guide
Delivery:	Loose or part of a shop pre-fabricated system

Joining System Specifications:

Fabrication:	Plain End Butt and Strap 1" - 60" (25mm - 1524mm)

Applicable Standards:

Testing:	ASTM D635, D638/D2105, D1599, D2412, IMO A.753(18) (L0 Fire Endurance)
QA:	ASTM D2563 Level I and Level II Visual Acceptance, D3567 EU Pressure Equipment Directive for Group 2 Liquids (Category 1, Module A - Internal Production Control); SEP may also be used for the sizes and ratings listed herein

FIBERBOND® 20HV-C

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FIBERBOND® 20HV-C

Typical Dimensions

Nominal Size (in. / mm)	I.D. (in. / mm)	O.D. (in. / mm)	Min. Wall (in. / mm)	Span (ft / m)	Press. Rating (psig / bar)	Weight (lbs/ft - kg/m)
2" (50)	2.00 (51)	2.50 (63)	0.24 (6)	12.6 (3.8)	200 (13.8)	1.5 (2.2)
3" (80)	3.00 (76)	3.50 (89)	0.24 (6)	14.2 (4.3)	200 (13.8)	2.2 (3.3)
4" (100)	4.00 (102)	4.50 (114)	0.24 (6)	15.4 (4.7)	200 (13.8)	2.9 (4.3)
6" (150)	6.00 (152)	6.63 (168)	0.30 (8)	18.2 (5.5)	200 (13.8)	5.9 (8.8)
8" (200)	8.00 (203)	8.75 (222)	0.36 (9)	20.5 (6.3)	200 (13.8)	8.9 (13.3)
10" (250)	10.00 (254)	10.88 (276)	0.42 (11)	22.7 (6.9)	200 (13.8)	12.4 (18.5)
12" (300)	12.00 (305)	13.00 (330)	0.48 (12)	24.5 (7.4)	200 (13.8)	16.4 (24.4)
14" (350)	14.25 (362)	15.13 (384)	0.42 (11)	23.5 (7.1)	150 (10.3)	17.1 (25.5)
16" (400)	16.25 (413)	17.25 (438)	0.48 (12)	25.1 (7.6)	150 (10.3)	21.6 (32.2)
18" (450)	18.25 (463)	19.38 (492)	0.53 (14)	26.7 (8.1)	150 (10.3)	28.9 (43.1)
20" (500)	20.25 (514)	21.50 (546)	0.59 (15)	28.0 (8.5)	150 (10.3)	34.7 (51.7)
24" (600)	24.25 (616)	25.75 (654)	0.71 (18)	30.0 (9.0)	150 (10.3)	47.8 (71.3)

All spans rated for SG=1.0 (water) and is limited by 1) a bending stress of 1,000psi (6.9MPa) for dead weight only, 2) a temperature of 150deg F (65deg C), and 3) a deflection of 0.50in. (12mm) over three spans. Maximum spacing is 30ft (9.1m). Actual spacing in the field may be shorter due to other design conditions such as wind loads. Information on larger pipe sizes is available from Specialty Plastics.

Typical Properties

Property	Value (U.S.)	Value (S.I.)
Pipe Axial Tensile Strength	8,400 psi	57.9 MPa
Pipe Axial Tensile Modulus	1,400,000 psi	9.7 GPa
Pipe Hoop Tensile Strength	26,400 psi	182.0 MPa
Pipe Hoop Tensile Modulus	2,200,000 psi	15.2 GPa
Pipe Bending Strength	16,800 psi	115.8 MPa
Pipe Bending Modulus	1,400,000 psi	9.7 GPa

Property	Value (U.S.)	Value (S.I.)
Density	0.06 lb/cu in.	1.7 g/cu cm
Thermal Expansion Coeff.	0.00001 in./in./deg F	0.000018 mm/mm/deg C
Minor Poisson's Ratio	0.55	0.55
Major Poisson's Ratio	0.35	0.35
Hazen Williams Coeff.	150	150
Specific Roughness	0.0002 in.	0.0005 cm

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