

FIBERBOND[®] Fiberglass Piping Systems

Series 20C

Description:

The FIBERBOND[®] 20C Fiberglass Piping Series is an ABS approved fiberglass reinforced pipe product with a homogeneously electrically conductive wall manufactured by filament winding utilizing epoxy vinyl ester resins and a 20-mil (0.50mm) liner, suitable for design pressures up to 150 psig (10.3 bar) and temperatures up to 150F (65c). The 20C standard product is available in 1" to 60" (25mm - 1524mm) nominal inside diameters. Series 20C was formally known as 20FW-C.

Applications:

- Design Range: 150 psig (10.3 bar) up to 24in. and 150F (65c) (with standard fittings)
100psig (6.9 bar) up to 36in.
50psig (3.5 bar) up to 60in.
- Applications: Marine systems requiring electrical conductivity both inside and outside
Jet fuel piping, gasoline service, diesel piping

Piping Specifications:

- Manufacture: Contact molded and filament wound 1" - 2" (25mm - 51mm)
Filament wound 3" - 60" (76mm - 1524mm)
- Construction: Homogeneously electrically conductive 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
- Approvals: ABS Certificate No. 00 NO 32171-X

FIBERBOND[®] 20C

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Typical Dimensions

Nominal Size (in. / mm)	I.D. (in. / mm)	O.D. (in. / mm)	Total Wall (in. / mm)	Span (ft / m)	Press. Rating (psig / bar)	Weight (lbs/ft - kg/m)
2" (50)	2.00 (51)	2.50 (63)	0.25 (6)	11.9 (3.6)	150 (10.3)	1.5 (2.2)
3" (80)	3.00 (76)	3.50 (89)	0.25 (6)	13.4 (4.1)	150 (10.3)	2.2 (3.3)
4" (100)	4.00 (102)	4.50 (114)	0.25 (6)	14.6 (4.5)	150 (10.3)	2.9 (4.3)
6" (150)	6.00 (152)	6.50 (165)	0.25 (6)	16.3 (5.0)	150 (10.3)	4.3 (6.4)
8" (200)	8.00 (203)	8.63 (219)	0.31 (8)	18.7 (5.7)	150 (10.3)	7.8 (11.6)
10" (250)	10.00 (254)	10.63 (270)	0.31 (8)	19.6 (6.0)	150 (10.3)	9.6 (14.3)
12" (300)	12.00 (305)	12.75 (324)	0.38 (10)	21.6 (6.6)	150 (10.3)	13.1 (19.5)
14" (350)	14.25 (362)	15.13 (384)	0.44 (11)	23.5 (7.1)	150 (10.3)	17.1 (25.5)
16" (400)	16.25 (413)	17.25 (438)	0.50 (13)	25.1 (7.6)	150 (10.3)	21.6 (32.2)
18" (450)	18.25 (463)	19.38 (492)	0.56 (14)	26.7 (8.1)	150 (10.3)	28.9 (43.1)
20" (500)	20.25 (514)	21.50 (546)	0.63 (16)	28.0 (8.5)	150 (10.3)	34.7 (51.7)
24" (600)	24.25 (616)	25.75 (654)	0.75 (19)	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	7,000 psi	48.3 MPa
Pipe Axial Tensile Modulus	1,130,000 psi	7.8 GPa
Pipe Hoop Tensile Strength	20,400 psi	140.7 MPa
Pipe Hoop Tensile Modulus	1,700,000 psi	11.7 GPa
Pipe Bending Strength	13,560 psi	93.5 MPa
Pipe Bending Modulus	1,130,000 psi	7.8 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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