Pyrocrete® 40

PRODUCT PERFORMANCE SUMMARY

*All test data was generated under controlled laboratory conditions and may exceed Carboline's recommended minimum values. Actual results in the field may vary depending on field conditions and application methods.

MINIMUM DENSITY

Method	ASTM E605[1]
Results	40 lb/ft³ (640 kg/m³) (minimum average)

COMBUSTIBILITY

Method	ASTM E136
Results	Passed (non-combustible)

BOND IMPACT

Method	ASTM E760
Exposure	Subjected to shock loading and evaluates adhesion and resistance to spalling, cracking, and delamination. It is an indication of the ability of SFRM to remain in place and resist removal during anticipated service conditions.
Results	No cracks, spalling, or delamination

IMPACT RESISTANCE

Method	ASTM D2794
Exposure	Direct impact from 2-inch steel ball dropped from a height of 10 feet Impact equal to 20 ft-lb of force
Results	Pass Maximum impact indentation cross-section diameter: 1.17 inches No cracking of splitting observed

BOND STRENGTH

Method	ASTM E736 (unprimed steel)[2]
Results	10,267 psf (491 kPa)
CSI MasterSpec® Requirements	1,000 psf (47.9 kPa)

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DEFLECTION

Method	ASTM E759
Exposure	Subjected to deflection and evaluates spalling and delamination under bending stress. Is an indication of the ability of SFRM to remain in place and resist removal during anticipated service conditions.
Results	Pass

COMPRESSIVE STRENGTH

Method	ASTM E761
Results	456 psi (3.1 MPa)
CSI MasterSpec® Requirements	300 psi (2.07 MPa)

FLEXURAL STRENGTH

Method	ASTM D790
Exposure	Instron with Bluehill software Span length of 6 inches with a crosshead speed of 0.02 in/min
Results	Average Flexural Strength: 256 psi (1.7 MPa) Maximum Strain: 0.0046 in/in

SURFACE BURNING

Method	ASTM E84
Results	Class A

CORROSION

Method	ASTM E937
Results	0.00 gm/mm^2

INSULATION K FACTOR

Method	ASTM C177
Results	1.06 BTU in/hr ft^2 - °F @ 75°F (24°C)

COEFFICIENT OF THERMAL EXPANSION

Method	ASTM E228
Results	5.8 x 10^{-6} (inch/inch ºF)

TORCH/HOSE STREAM

Method	NFPA 58 Annex H Torch / Hose Stream Test
Exposure	Procedure exposes systems to a torching fire environment combined with a high-pressure hose stream to simulate firefighting measures to ensure that materials can remain intact and perform intended function. - Torch fire environment for 20 minutes duration - Concurrent torch fire and hose stream 10 minutes duration - Torch fire environment for 20 minutes duration - 50 minute total duration
Results	Pass

EXPLOSION RESISTANCE

Method	Baker Risk Engineering Shock Tube Testing
Exposure	8-foot tall columns exposed to blast at 3 different angles with flange edges at 45º angle to blast load. Corresponds to a peak loading on the column surface facing the blast of 3 bar
Results	Pass

SHORE DO HARDNESS

Method	ASTM D2240
Results	64

NOTE

The technical data presented in this document is accurate to the best of Carboline's knowledge based on laboratory testing of the product(s) or system(s) described. Actual results in the field may vary depending on field conditions and application methods. The performance characteristics stated do not constitute a guarantee or warranty that the products will meet the stated results under all circumstances. Contact Carboline technical staff with questions. Test reports and additional data are available on request.

[1] Air dry at ambient conditions until constant weight is achieved. Do not force dry.
[2] Bond strength testing performed utilizing ASTM E736 with AWCI Technical Manual 12-A modifications.

All test data above was generated under laboratory conditions. Field testing results may vary. Physical property data was derived using 4.75 gallons of water per 50 lb. (22.7 kg) bag.