

TECHNICAL BULLETIN – Insulation Systems

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Range-Glas[®] EQ and Spin-Glas[®] WH EQ Bio-Based Binder Product Compliance

Johns Manville Range-Glas[®] EQ and Spin-Glas[®] WH EQ Formaldehyde-free™ fiber glass insulation from Winder will now be manufactured using a bio-based binder. The new binder is made primarily from rapidly renewable plant-based materials, and is engineered for optimal performance in JM's advanced manufacturing process.

The new binder composition results in a change to the product's appearance, which is now a brown color. The color and binder differences have no impact on the basic performance properties of the insulation, and testing at accredited Johns Manville and external laboratories has confirmed that products utilizing the new binder continue to comply with all the performance requirements of industry standards.

Industry Standard Compliance

Range-Glas[®] EQ and Spin-Glas[®] WH EQ meets the following codes and standards:

- Fire Hazard Classification (FHC) FHC 25/50 per ASTM E84, UL 723 and CAN/ULC S102-M88, NFPA 90A and NFPA 90B
- ASTM C518 Thermal Transmission Properties
- ASTM C423 Sound Absorption
- ASTM C411 Temperature Limits (1000°F max.)
- ASTM C665 Corrosiveness
- ASTM C1338 Fungi Resistance
- ASTM C1104 Water Vapor Sorption
- ASTM C1304 Odor

Product Comparisons

The new binder does not change the size, form, or applicability of the product. Therefore, JM's new bio-based binder products can, and should, be used interchangeably with the existing products.

Fabricators have found that products made with the new bio-based binder handle well during the fabrication process.

Range-Glas® Insulation Comparison

- Demonstrates equal performance in all of the required properties.
- Exhibits a somewhat better feel when handling.
- Demonstrates less smoke and odor during the self-clean cycle.

Performance Properties	Range-Glas® XG Formaldehyde-Free™ Binder	Range-Glas® EQ New Bio-Based Binder
Available Densities	1.02 pcf – 2.5 pcf	1.02 pcf – 2.5 pcf
Available Thicknesses	1.0 in – 4.0 in	1.0 in – 4.0 in
Temperature Limit	1000° F	1000° F
Thermal Conductivity (ASTM C518)	0.26 - 0.22	0.26 - 0.22
Sound Absorption (ASTM C423)	0.65 - 0.80	0.65 - 0.80
Corrosiveness (ASTM C665)	Pass	Pass
Fire Hazard Classification (ASTM E84)	25/50	25/50
NFPA 90A and 90B	Meets	Meets
Recycle Content	-	-
Color	White	Brown
Binder Type	Acrylic	Bio-based
De-dusting Oil (type/amount)	-	No change
Dust	-	No change
Feel	-	Improved
Fabrication/Cut-ability	-	No change
Self-Clean (smoke)	-	Less observed
Self-Clean (odor)	-	Less detected
Self-Clean (odor type)	Burnt	Burnt Cookies
Self-Clean (off gas composition)	See MSDS	TBD

Spin-Glas® Water Heater Insulation Comparison

- Demonstrates equal performance in all of the required properties.
- Exhibits a somewhat better feel when handling.

Performance Properties	Spin-Glas® WH XG Formaldehyde-Free™ Binder	Spin-Glas® WH EQ New Bio-Based Binder
Available Densities	1.02 pcf – 2.0 pcf	1.02 pcf – 2.0 pcf
Available Thicknesses	1.0 in – 2.0 in	1.0 in – 2.0 in
Temperature Limit	1000° F	1000° F
Thermal Conductivity (ASTM C518)	0.26 - .22	0.26 - 0.22
Sound Absorption (ASTM C423)	.60 -.65	.60 - .65
Corrosiveness (ASTM C665)	Pass	Pass
Fire Hazard Classification (ASTM E84)	25/50	25/50
NFPA 90A and 90B	Meets	Meets
Recycle Content	-	-
Color	White	Brown
Binder Type	Acrylic	Bio-based
De-dusting Oil (type/amount)	-	No change
Dust	-	No change
Feel	-	Improved
Fabrication/Cut-ability	-	No change