

## Technical Bulletin

Owens Corning tests and certifies its metal building insulation (MBI) products – “Certified R” & “MBI Plus” – to comply with ASTM C991, “Standard Specification for Flexible Glass Fiber Insulation for Metal Buildings”. The required physical and performance properties, and the test methods for determining those properties, are:

- Thermal Resistance, per ASTM C177 or ASTM C518
- Surface Burning Characteristics, per ASTM E84
- Combustion Characteristics per, ASTM E136
- Water vapor sorption, per ASTM C1104/C1104M
- Fungi Resistance, per ASTM C1338
- Corrosiveness, per procedure in Specification ASTM C665
- Odor Emission, per ASTM C1304
- Dimensional Tolerances, per ASTM C167

Also referenced in C991 is a similar standard generally used in residential construction, ASTM C665, “Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing”. This

specification references the same test methods as those listed above for C991, with the exception of E136.

The primary difference between C991 and C665 is product classification. C991 defines Type I as glass in fibrous form, bonded with a resin and formed into a blanket or batt. Type II is defined simply as Type I “supplied with a suitable facing adhered to one surface”. Owens Corning manufactures and sells its MBI products only in unfaced form. Any facing needed is applied later, by other parties, so we certify to ASTM C991, Type I. C665 classifies as follows: Type I is “Blankets without membrane coverings (facings)”, Type II is “Blankets with nonreflective membrane coverings” and Type III is “Blankets with reflective membrane coverings”. The membrane coverings are further classified by surface burning characteristics and water vapor permeance. Owens Corning manufactures and sells its standard building thermal insulation under all three classifications so the certification to C665 will vary slightly from product to product.

The other standard to which Owens Corning certifies compliance on its Certified R products is NAIMA 202, “Standard for Flexible Fiber Glass Insulation to be Laminated for Use in Metal Buildings”. It includes the same physical and performance properties as ASTM C991. It also includes a section titled “Thermal Resistance Tolerance”. As stated previously, our MBI products are sold with no facing attached. However, the lamination process may tend to over compress the insulation and potentially reduce the end-product R-value. To compensate, NAIMA 202 requires the insulation be a certain percentage above the manufacturer’s labeled R-value, prior to lamination. The standard also states, “Samples of this product shall be tested quarterly by a national recognized independent laboratory, and determined to meet the stated requirements of the standard”. Owens Corning contracts with the National Association of Homebuilders Research Center (NAHB-RC) to provide this ongoing testing and certification service.



# Product Standards for Metal Building Insulation

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