
COMPRESSIVE STRENGTH vs COMPRESSIVE RESISTANCE

Due to its patented manufacturing process, HITLIN™ Industrial Insulation has outstanding compressive strength (resistance). As an example, HITLIN has 60 times the compressive strength of a typical 8# mineral wool and approximately 4 times the compressive strength ROXUL® SturdiRock.

What is the Compressive Strength of HITLIN™?

The compressive strength of HITLIN™ is 28.4 psi at 5% deformation. For comparison, the compressive strength of some other products are:

- Calcium-Silicate: (ASTM C 533) 100 psi
- Perlite: (ASTM C 610) 60 psi
- Mineral or Glass Wool: (ASTM C 547) Same classification under which HITLIN™ currently resides; varies from 0.02 to 7.7 psi (at 10% deformation) depending on manufacturer and exact product line.

According to paragraph 3.6 of ASTM C 165 (Test Method for Measuring Compressive Properties of Thermal Insulations) the term to use for HITLIN™ is best described as compressive “resistance” instead of “strength”. For those materials (calcium-silicate or perlite) where the specified deformation is regarded as indicating the start of **complete failure**, the compressive resistance may properly be called compressive strength. If you exceed the compressive strength of banded down calcium-silicate or perlite (which is common during the radial expansion of a hot service process line) it will fracture and potentially crumble. HITLIN™ will only experience 5% deformation at 28.4 psi and has the resilience to spring back when the compressive load is removed.

“Wool” products (mineral, rock, glass) have significantly lower compressive resistance than HITLIN™ and are stated at 10% deformation, twice as much as HITLIN™. Further, all wool products contain organic chemical binders that will burn-off (decompose) at temperatures exceeding 380°F. When those binders burn off, the compressive resistance of those products will be significantly reduced from their already “relatively” low levels. HITLIN™ contains no organic binders --- nothing to decompose at elevated temperatures.

We are happy to address any concerns related to our HITLIN™ product. If the reader has any other questions or concerns, please feel free to contact us at any time.