



Compressive Strength, Working Stress Recommendations

Compressive strength (kPa) is an important design property when resistance to compressive load is required of FOAMULAR in an application such as under load-bearing concrete slabs. Recommended compressive stress limits are derived from ultimate compressive strength. For compressive load, the published 'minimum' compressive strength also represents the 'ultimate' compressive strength.

Recommended compressive stress limits are set to ensure that long term creep¹ from dead load will not exceed 2%, and that total load (live + dead) will not exceed approximately of the proportional limit for FOAMULAR products. FOAMULAR compressive strength proportional limit is equal to or greater than the published minimum compressive resistance value. By limiting stress as recommended, the designer is assured that FOAMULAR, acting as a structural material, is functioning with approximately a 2x factor of safety.

For FOAMULAR products, Owens Corning recommends the compressive stress live and dead load maximums listed in the following table based on the concepts described above:

Dead Load² – 1/3 of the published minimum compressive strength

Live Load³ – 1/5 of the published minimum compressive strength

Definitions:

Long term creep deformation in the thickness of foam plastic layer over time while under constant live and/or dead load.

Dead Load: Static load typically acting downward comprised of the weight of the concrete on top of the foam board or other permanent structural load on top of the concrete slab.

Live Load: The moveable weight of the material on top of the concrete; i.e. people, furniture, equipment, vehicles etc.

