BLAST FURNACE MINERAL WOOL SLAG

The ASTM defines blast furnace slag as "the non-metallic product consisting essentially of silicates and alumino silicates of calcium and other bases, that is developed in a molten condition simultaneously with iron in a blast furnace."

Two products are obtained from the furnace: molten iron and slag. The slag consists primarily of the silica and alumina from the original iron ore, combined with calcium and magnesium oxides from the flux stone. It comes from the furnace in a molten state with temperatures exceeding 1480˚C (2700˚F).

2x4 Blast Furnace Slag.

Mineral wool slag is a furnace product made from blast furnace slag, through which a stream of air or steam is blown. Production techniques are based on spinning the molten rock on high speed spinning wheels somewhat like the process used to prepare cotton candy. The fiber is produced at high temperatures, incorporating slag and other materials, which combine to impart superior tensile strength. The final product is a mass of fine, intertwined fibers with a typical diameter of 6 to 10 micrometers. Mineral wool may contain an oil to reduce dusting. The material is processed into insulation and other fibrous building materials that are used for structural strength and fire resistance.

Mineral wool is a high-quality, versatile fiber suitable for a variety of applications, including ceiling tiles, insulation, asphalt, cementitious reinforcement, friction products, fire protection systems, adhesives, and fillers.

Mineral wool is a superior product for asphalt applications and an excellent alternative to cellulose fibers in Stone Matrix Asphalt (SMA) applications.

Mineral fiber is exceptionally resilient and will not burn, rot, or absorb moisture or odors. It contains recycled content, which may assist in obtaining LEED® credits.

The individual fibers conduct heat very well, and when pressed into rolls and sheets their ability to partition air makes them excellent heat insulators and sound absorbers. Though not completely immune to fire, the fire resistance

Product Specifications - Blast Furnace Slag			
Mineral	Acceptable Range	Mineral	Acceptable Range
Silica (SiO_2)	35% - 44%	Sulfur (SO_3)	Maximum of 3.2%
Lime (CaO)	35% - 44%	Iron Oxides (Fe_2O_3)	Max. of 1.0%
Magnesia (MgO)	10% - 13%	A/B Ratio	0.8 – 1.2
Alumina (AL_2O_3)	7.0% - 12.0%		
Note: 95% reliability that chemistries will fall within the typical ranges listed above.			

Size and Grading Requirements	
Sieve Size	**%Passing Sieve**
5"	100%
3"	25% max
2"	5%-20% max
1-1/2"-2"	5% max

Mineral fiber insulation products contribute to LEED credits.

of mineral wool makes it a common building material when passive fire protection is required; when used as spray fireproofing; in stud cavities in drywall assemblies and as packing materials in firestops.

Mineral wools are unattractive to rodents but will provide a structure for bacterial growth if allowed to become wet.

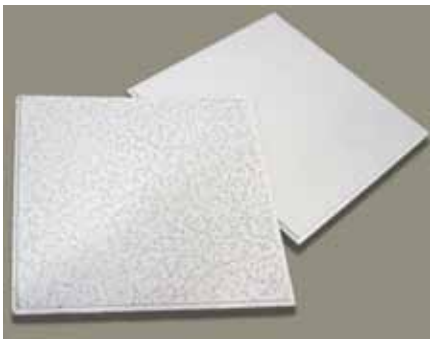
Industrial applications of mineral wool include thermal insulation (as both structural insulation and pipe insulation), filtration,

Mineral wool products can hold large quantities of water and air that aids root growth and nutrient uptake.

soundproofing, and germination of seedlings.

Other uses are in resin bonded panels, growth medium in hydroponics, filler in compounds for gaskets, brake pads, in plastics in the automotive industry and as a filtering medium.

Mineral fibers without binder are used as a raw material for reinforcing purposes in various applications, such as friction



Slag wool insulations are used as acoustical insulation for residential walls and ceilings.

materials, gaskets, plastics and coatings.

Mineral wool products can hold large quantities of water and air that aids root growth and nutrient uptake in hydroponics; their fibrous nature also provides a good mechanical structure to hold the plant stable. The high natural pH of mineral wool makes it initially unsuitable to plant growth and requires "conditioning" to produce a wool with an appropriate, stable pH.

Slag wool insulations are used as thermal insulation in walls and attics and as acoustical insulation for residential walls and ceilings.

They offer a wide array of benefits for homeowners looking for environmentally responsible thermal and acoustical insulation solutions.

Slag wool resists settling, and batt products spring back after average compression so that the installed thermal performance is maintained over the life of the product.

Slag wool insulation is tested to all applicable industry standards to ensure its R-value does not deteriorate over time.

Slag wool insulation offers protection against damaging moisture infiltration that can reduce the R-value of insulation.

In fact, the higher density of slag wool insulation allows it to achieve higher R-values than cellulose or open cell foam insulation when installed in wall cavities.

Slag wool insulation is naturally non-combustible and remains so for the life of the product without the addition of harsh or potentially dangerous chemical fire retardants.

Slag wool insulations save energy and reduce greenhouse gas emissions when applied in residential, commercial, office, institutional and industrial buildings and processes.

They are primarily used for thermal control and acoustical comfort in homes and buildings; for thermal, acoustical and condensation control in residential, commercial and institutional HVAC systems; for energy savings, process control, and sound control in industrial and manufacturing processes.

Mineral fiber is the most fire resistant material next to asbestos. The insulation is used in areas where fire rating is important. And, because it is more expensive to use, it has to meet a tight spec compared to much less expensive, more widely used cellulose and fiberglass.

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