

DIMAL ASIA PACIFIC

Glass Industry



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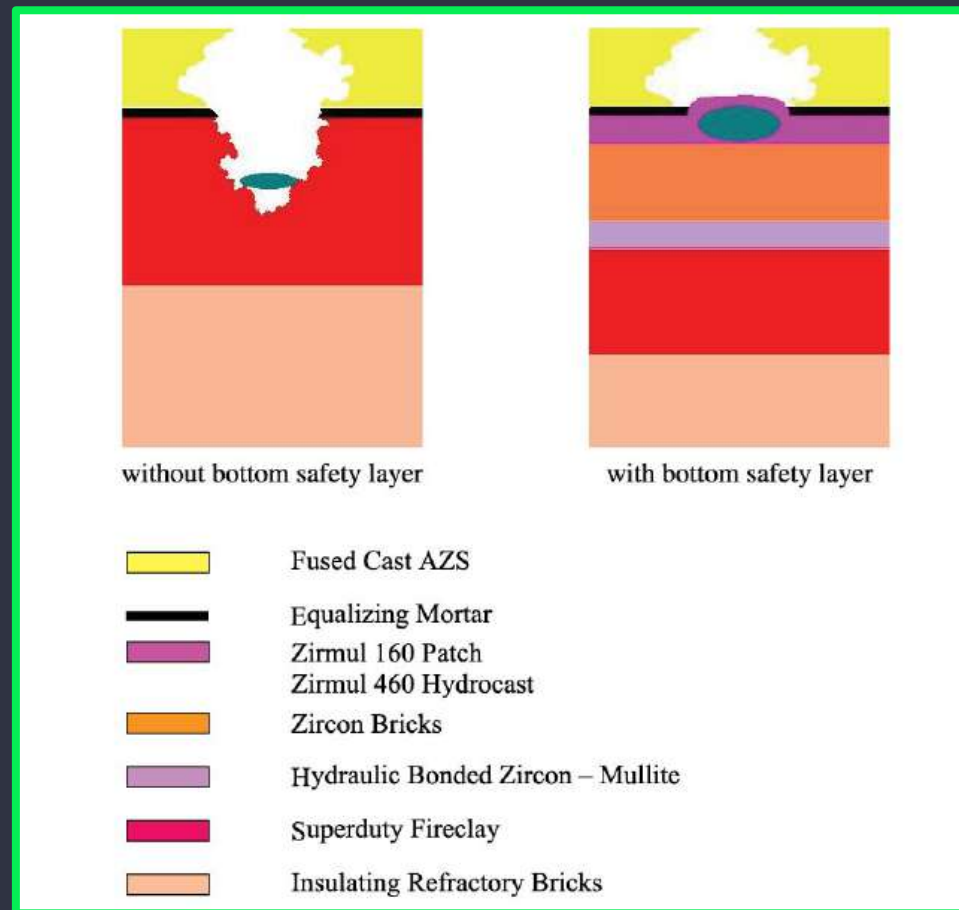
The Glass industry is unique in their usage of extremely high grade, very low porosity, fused refractory products. DIMAL has in our range of products which can complement the application of these materials with Zircon containing refractory patching, ramming, precast shapes and monolithic castable to increase productivity, thermal efficiency, and most importantly the safety of the operations.



MELTING FURNACE

Application Range & Areas

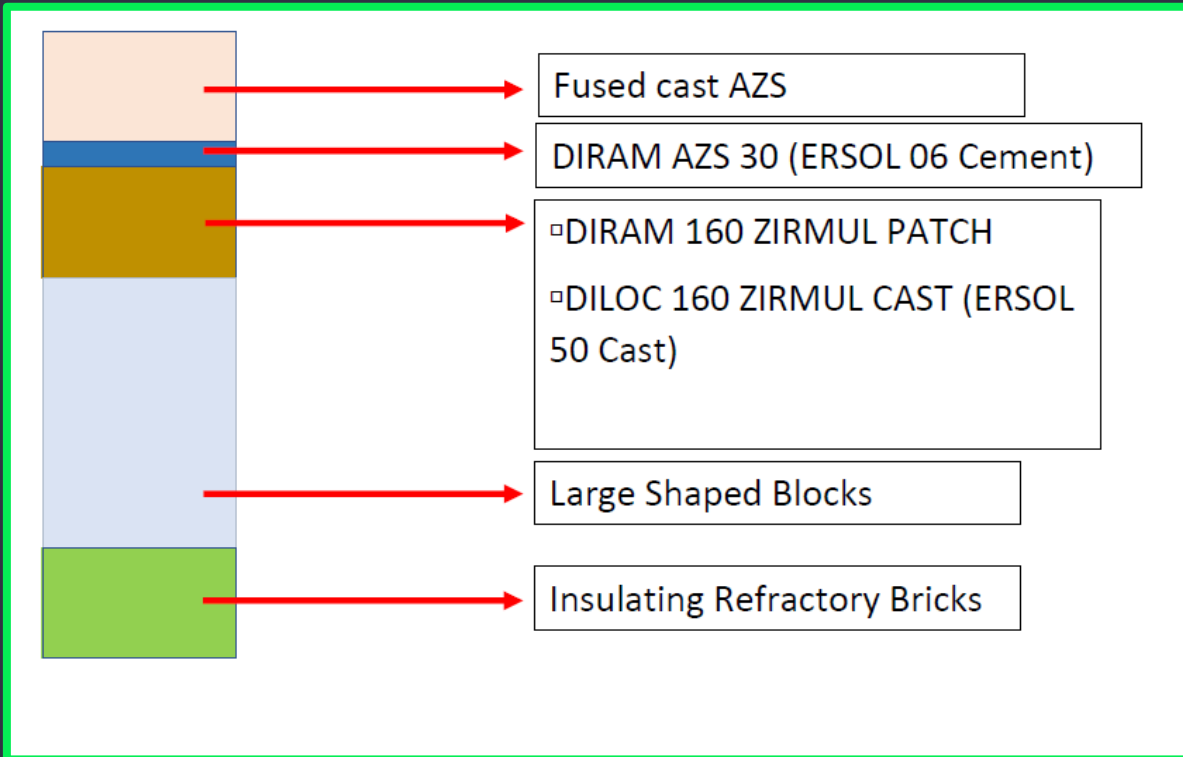
- Bottom Tank:
 - Under Bottom Paving – Melting end, working end, feeder channels
- Regenerator Chamber Walls
- Burner Blocks
- Insulating Refractory Mixes



Glass Tank Bottom Protection:

- Upward/downward drilling (nutshell effect)
- Additional safety with the bottom protection mixes
- Chemically/hydraulically bonded Zircon Mullite Refractory Monolithic

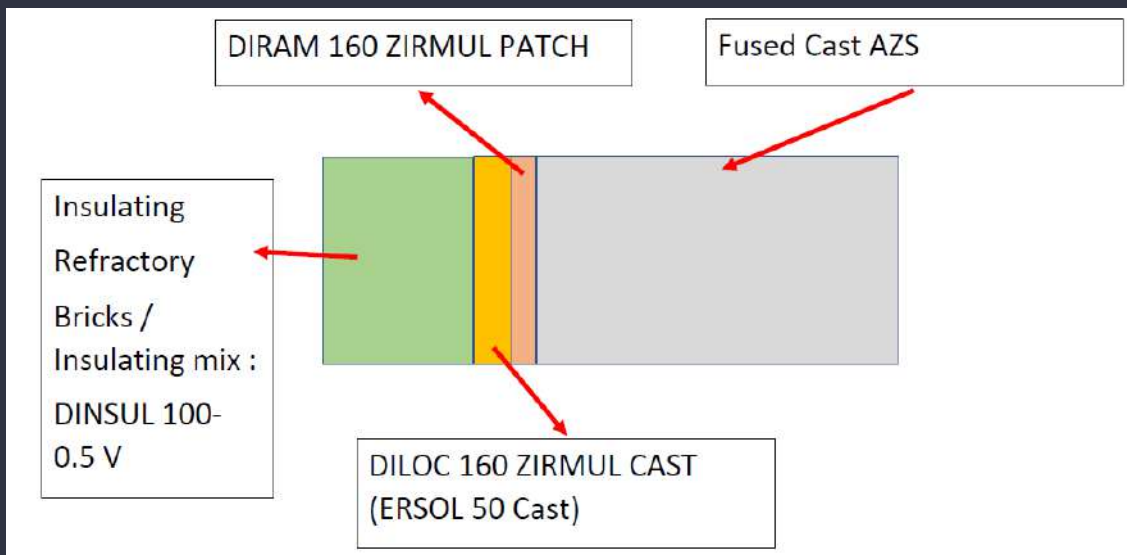
APPLICATION AREAS: BOTTOM TANK



Glass Melting Furnace Bottom Tank Refractory Lining Layers

Product Name	Product Reference	Description
DIRAM 160 ZIRMUL PATCH	N/A	1600°C Chemical bonded, zircon and corundum based, phosphate-bonded ready to use heat setting plastic mix for glass furnace.
DIRAM AZS 30 Series: Size: 0-0.4mm 0-0.5mm 0-5mm	N/A	1600°C AZS based ready to use ramming and patching mix. Mortar preparation by trowelling with water addition. Improved corrosion resistance with 30% ZrO ₂ , and high stability AZS Ramming and Patching Mix
DILOC 160 ZIRMUL CAST	ERSOL 50 CAST	1550°C Hydraulic bonded, low cement castable based on high alumina material, zircon and mullite

APPLICATION AREAS: REGENERATOR CHAMBER WALL



Application Area	Product Name	Product Reference	Description
Chamber Wall	DINSUL 100-0.5V	N/A	1000°C Hydraulic bonded, light weight insulating castable (gunnable) based on vermiculite.
Bottom-Sidewall	DILOC 160 ZIRMUL CAST	ERSOL 50 CAST	1550°C Hydraulic bonded, low cement castable based on high alumina material, zircon and mullite.
Mortar Chamber Wall & Under Bottom Paving	DIRAM AZS 30 Series: Size: 0-0.4mm 0-0.5mm 0-5mm	ERSOL 06 Cement	<ul style="list-style-type: none"> • Dry/semi-dry mixes • Wet mixing at site • ZrO₂: 30%, SiO₂: 20%, Al₂O₃: 48%

APPLICATION AREAS: REPAIR & OTHER MATERIALS



Application Area	Product Name	Description
Superstructure Repair Material	DIRAM 165 ZIRCON Patch	1650°C Chemical bonded, zircon based, phosphate bonded ready to use heat setting ramming plastic mix for glass furnace.
	DIRAM 160 ZIRMUL Patch	1600°C Chemical bonded, zircon and corundum based, phosphate-bonded ready to use heat setting plastic mix for glass furnace.
Luting Joint between Spout & Channel in Glass Forehearth, Filling Expansion Joints in Silica Upper Structure	DIRAM 165 Zircon Patch	1650°C Chemical bonded, zircon based, phosphate bonded ready to use heat setting ramming plastic mix for glass furnace.
Burner Block	DILOC 160 ZIRMUL Cast	Precast Shape using 1550°C Hydraulic bonded, low cement castable based on high alumina material, zircon and mullite

SPECIFICATION COMPARISON

- DIRAM AZS 30 vs ERSOL 06 Cement

Grade	ZrO2, %	SiO2, %	Al2O3, %	Others, %	Grain size, mm	Shelf life	Setting Type	Application Method
DIRAM AZS 30	30	22 max	45 min		0-0.4 0-0.6 0-0.5	*12 months	Heat (phosphate)	Ramming, Patching, Trowelling (mortar)
ERSOL 06 Cement	30	20	48	2	0-0.6	12 months	Organic (phenolic)	Trowelling (mortar)

*Actual Storage Tested

SPECIFICATION COMPARISON

- DILOC 160 ZIRMUL CAST vs ERSOL 50 CAST

Grade	ZrO ₂ , %	SiO ₂ , %	Al ₂ O ₃ , %	Others, %	Grain size, mm	Shelf life	Setting	Application
DILOC 160 ZIRMUL CAST	35	30 max	30 min		0-6	6 months	Cement	Low Cement Castable
ERSOL 50 Cast	30	20	48	2 (Na ₂ O, Fe ₂ O ₃ , TiO ₂ , CaO)	5	12 months	Cement	Low Cement Castable

MORTAR FOR GLASS FURNACE APPLICATION

- Ready-to-use Silimanite Mortars:

DIMOR 50 SM-P

1500°C Ceramic bonded, sillimanite material based ready to use refractory heat setting mortar

DIMOR 50 SM-S

1500°C Ceramic bonded, sillimanite material based ready to use refractory air setting mortar

THANK YOU