SECTION 072000

BOARD INSULATION

PART 1 GENERAL

1.1 DESCRIPTION

A. Work of this section, as indicated on the drawings and specified herein, pertains to the fabricating, furnishing and installing of cellular glass insulation board for use as thermal barrier in walls, roofs and any other locations indicated in the documents.

1.2 REFERENCES

A. The minimum standards for products specified in this section shall be including as under but not limited to the following. Except as otherwise specified herein, perform work in accordance with specifications, codes and standards cited therein, and their latest applicable addenda and supplements. Where there is conflict between the reference standards the most stringent of the conditions/requirements shall be applicable.

B. American Society for Testing and Materials - ASTM:

C165/240/522	-	compressive strength
C177/518	-	thermal conductivity
C240	-	absorption of moisture
C303	-	density
E84	-	flame spread and smoke development
E96	-	water-vapor permeability
E136	-	combustibility

C. European Norm, according EN13167 - EN:

EN1602	-	density
EN12667/12939	-	thermal conductivity
EN13501-1	-	reaction to fire
EN826	-	compressive strength
EN1609/12087	-	water absorption
EN12086	-	water vapor transmission

1.3 SUBMITTALS

A. The following Submittals shall be submitted.

1. Product data and samples.
2. Method of installation
3. EPD Environment Product Declaration according ISO14025

1.4 WARRANTY

A. Provide a warranty of 20 for not absorbing moisture, retaining insulation performance and dimensional stability under normal conditions and use.

PART 2 PRODUCTS

2.1 PRODUCTS SUPPLIERS AND MANUFACTURERS

1. Pittsburgh Corning Europe N.V., Tessenderlo - Belgium
2. FOAMGLAS® Dubai, United Arabian Emirates
3. Or equal

2.2 **MATERIALS**

A. **Wall Insulation in cavity wall or behind cladding**. In slabs or board according supplier recommendation. Thickness according to the drawings or spec. Cellular glass insulation with following characteristics.

1. Type: FOAMGLAS® W+F in slabs or boards or equivalent
2. Density: 105kg/m^3 (ASTM C303, EN 1602)
3. Thermal conductivity at 10^o C: 0.038W/m K, ASTM C-518/C177, EN 12667/12939/10456
4. Compressive strength: >400 kPa, ASTM C165/C240/C552, EN 826
5. Water Absorption: 0.2% (only moisture retained is that adhering to surface cells after immersion) ASTM C240, EN1609/12087
6. Water vapor permeability shall be 0.0 (zero) per inch, ASTM E96
7. Reaction to fire: Non-combustible, ASTM E136, Flame spread 0 (zero) and smoke development 0 (zero), ASTM E84, Euro class A1, EN13501
8. Ecology: Produced with recycling glass content >60% and low emission to full fill environment requirement and enable LEED credits.

B. **Insulation for exterior façade application with/for thick bed renders.** In slabs or board according supplier recommendation. Thickness according to the drawings or specification. Rigid cellular glass insulation with following characteristics.

1. Type: FOAMGLAS® T4+ in slabs or boards or equivalent
2. Density: 115kg/$m^{3,}$ ASTM C303, EN 1602
3. Thermal conductivity at 10^o C: 0.041W/mK, ASTM C-518/C177, EN 12667/12939/10456
4. Compressive strength: >600 kPa, ASTM C165/C240/C552, EN 826
5. Water Absorption: 0.2% (only moisture retained is that adhering to surface cells after immersion), ASTM C240, EN1609/12087
6. Water vapor permeability shall be 0.0 (zero) per inch, ASTM E96
7. Reaction to fire: Non-combustible, ASTM E136, Flame spread 0 (zero) and smoke development 0 (zero), ASTM E84. Euro class A1, EN13501
8. Ecology: Produced with minimum recycling glass content > 60% and low emission to full fill environment requirement and enable LEED credits.

PART 3 EXECUTION

3.1 **EXAMINATION**

A. Verify substrate, adjacent materials, etc. are ready to receive insulation.

B. Verify substrate and adjacent are ready to receive insulation. Are flat, free of honey comb, fins, irregularities and materials or substances that may impede adhesive bond and are free of matter detrimental to installation of uniform layer of insulation.

3.2 **INSTALLATION**

A. **Wall application behind cladding:**

Follow the supplier recommendation. Apply the cellular glass slabs with adhesive, which is spread onto the bedding face of the cellular glass slab using a notched trowel as well as on to the butt edges of the slab. The slabs are pressed to the substrate are laid staggered in parallel courses with sealed joints. The slabs are pressed down to the substrate and pushed diagonally into position. Additional mechanical fasteners applied according supplier recommendation.
Alternative the cellular glass board can be fixed mechanically only to the ground if noted in the drawings.

B. **Wall application in cavity wall**

Follow the supplier recommendation. Apply the cellular glass board to the inner leaf with tightly butted und pressed joints. The boards are installed course-by-course and spot fixed mechanically. Before installation of the first row, a level base should be provided to allow for accurate alignment of the boards. Sealing the joints with adhesive.

C. **Application of exterior wall/façade insulation with thick bed render:**

Follow the supplier recommendation. Apply the cellular glass slabs with adhesive, which is spread onto the bedding face of the cellular glass slab using a notched trowel as well as on to the butt edges of the slab. The slabs are pressed to the substrate are laid staggered in parallel courses with sealed joints. The slabs are pressed down to the substrate and pushed diagonally into position. Additional spot fixing 4 pc/m^2 on ceiling, and 2 pc/m^2 on wall.
For direct rendering follow the supplier recommendation.

3.3 PROTECTION OF INSTALLED CONSTRUCTION

A. Do not permit work to be damaged prior to covering insulation.

END OF SECTION