

## 1 GENERAL

### 1.1 General Requirements:

- .1 The general conditions of contract, Division 01 General Requirements, and all Addenda thereto form an integral part of and must be read in conjunction with the requirements of this Section.
- .2 Cooperate and coordinate with the requirements of other units of work specified in other Sections.

### 1.2 Section Includes:

- .1 The Work of this Section shall include, but not limited to:
  - .1 Exterior Clay Tile Façade extruded hollow double wall clay panels/tiles
  - .2 Interior Clay Tile Façade extruded hollow double wall clay panels/tiles
  - .3 Clay “Baguette” Shading System
  - .4 Clip support system
  - .5 Horizontal clip carrier support channel
  - .6 Incorporated metal flashings
  - .7 Air/Vapour barrier membrane and sealants
  - .8 Z-Girt framing
  - .9 Wall insulation

### 1.3 Related Sections:

- .1 Section 01 35 40: General LEED Requirements
- .2 Section 03 30 00: Cast-in-Place Concrete
- .3 Section 05 41 00: Exterior Wind-load Bearing Steel Stud Systems
- .4 Section 06 10 00: Rough Carpentry
- .5 Section 07 21 13: Board Insulation
- .6 Section 07 27 00: Air/Vapour Barriers
- .7 Section 07 62 00: Sheet Metal Flashing and Trim
- .8 Section 07 90 00: Joint Sealants
- .9 Section 08 44 00: Aluminum Curtain Wall
- .10 Section 09 21 16: Gypsum Board Assembly

1.4 Quality Assurance:

- .1 Ensure that the Clay tile panel and trim manufacturer has a minimum of 10 years experience.
- .2 Engage an experienced installer having a minimum of five (5) years of documented successful experience and employing skilled tradesman only in strict accordance with manufacturers' print specifications and who has completed Clay Tile Wall Cladding projects similar in material, design and extended to that indicated for this project and with a record of successful in-service performance.

1.5 Standards:

- .1 DIN 18516: back ventilated, non-load bearing external enclosures of building requirements and testing
- .2 DIN 456: Burnt Clay roofing tiles: requirements, test control
- .3 DIN 1065: Design loads for buildings
- .4 DIN 7337: Break mandrel blind rivets
- .5 DIN 4102-4: Clay tiles and the clip holders, bearing sections and joint profiles in aluminum are inflammable (construction material class DIN 4102-A1)
- .6 CAN/ULC S114-05 Standard Method of Test for Determination of Non-Combustibility in Building Materials
- .7 DIN 4109: Sound insulation in buildings
- .8 ASTM C 67-02: Freeze-Thaw Cycles
- .9 ASTM C 67-94: Absorption, Suction Rate, Effluorescence

1.6 Performance Requirements:

- .1 Maximum deflection not to exceed  $L/180$  under systems own weight plus wind load (positive and negative) loads acting normal to the plane in accordance with the Building Code Climatic Data, wind load 1:30 years.
- .2 Calculate live load deflections in accordance with CSSBI 20M, as modified by the requirements of this Section.
- .3 All Clay Tile Wall Cladding must have been tested to CAN/ULC S114-05: Fire Testing for Determination of Non-Combustibility in Building Materials.
- .4 Provide for movement of components without causing buckling, failure of joint seals, undue stress on fasteners when subject to seasonal temperature range from  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) to  $+50^{\circ}\text{C}$  ( $120^{\circ}\text{F}$ ), and wind loads noted above.
- .5 Include expansion joints to accommodate movement in wall system and between wall system and building structure, where these movements are caused by deflection of building structure, and accommodate these

movements without permanent distortion, damage to infills, racking of joints, breakage of seals, or water penetration.

- .6 Provide for positive drainage to the exterior of all water entering or condensation occurring within the system.
- .7 Final review and acceptance of work completed by this Section shall be carried out by manufacturers' representative, Consultant, Construction Manager, and Sub Trades.

#### 1.7 Design

- .1 Ensure that tile application substrate surfaces do not vary more than +/-6mm in 2400mm.
- .2 Design all Clay Tile Wall Cladding panel and trim to withstand all superimposed loading, including wind loading and the like, as outlined in the Canada Building code.

#### 1.8 Submittals

- .1 Submit shop drawings, product data and samples in accordance with section 01 33 00.
- .2 Submit shop drawings showing all elevations and locations where tile is applied. Clearly indicate dimensions, openings, joints and trims, and related work. Each drawing submitted shall bear the signature and stamp of a qualified professional engineering registered in the Province of Work.
- .3 Submit duplicated full size samples of each colour of Clay Tile Wall Cladding System required for the work.
- .4 Comply with submittal requirements specified in Section 01 35 40 – General LEED Requirements and Section 01 61 10 LEED Product Requirements for submittal of documentation for recycled content, (post consumer and post industrial), regional materials, VOC emission rates, urea formaldehyde content and other information required to confirm compliance with requirements.
- .5 Submit Product Data in accordance with section 01 35 40 – General LEED Requirements and Section 01 61 10 – LEED Product Requirements for approval prior to ordering materials.

#### 1.9 Product Handling and Storage

- .1 Deliver materials in the manufacturers' original packaging with seals and labels intact. Prior to use, examine materials for damage. Do not use damaged material.

#### 1.10 Warranty

- .1 Provide a 1 year warranty on installation, and manufacturers' standard warranty on Clay Tile Wall Cladding product.

## 2 PRODUCTS

### 2.1 General

- .1 Comply with the requirements of section 01 61 10 – LEED Requirements.
- .2 Where applicable, use materials complying with volatile organic compound (VOC) limits as specified in Section 01 35 90 – Indoor Air Quality Management.

### 2.2 Manufacturer

- .1 Alphon (Longoton) clay tile façade as manufactured by Moeding and distributed and installed by Thermal Systems KWC Ltd, telephone (403) 250-5507 or fax (403) 250-6891.

### 2.3 Materials

- .1 Clay Tile: 30mm (40mm) thick, hollow double skin clay panels, as manufactured by Moeding, colour and texture as selected by the consultant. Sizes to be vertical modules of 150mm to 300mm (600mm) and lengths to vary up to 1500mm (3000mm). Tiles to have the following features:
  - .1 Tolerances; Length: Maximum +/-2mm, Height: Maximum +/- 1.2%, Flatness: Maximum 0.7% over length of panel
  - .2 Cut Edges: Minimize chipping at cut edges to match accepted mock-up
  - .3 Density: >2.0 g/cm<sup>3</sup> (DIN 105 part 4 Ceramic Clinker)
  - .4 Moisture Absorption: <3% measured using ASTM C373
  - .5 Frost Resistance: Meet or exceed the requirements of DIN EN 539 part 2 (150 frost cycles)
  - .6 Appearance and structure: meet or exceed the requirement of DIN EN 1304 Appendix B
  - .7 Impact Load Resistances – As per EOTA TR001 impact resistance of panels and panel assemblies
  - .8 Air cavity – minimum 25mm from face of insulation, drained to the exterior
  - .9 Combustibility: Meet or exceed the requirements of CAN/ULC S114-05

### 2.4 Components

- .1 Façade Fastening System: Gen 06 facade fastening system consisting of the following components:
  - .2 Clip fasteners: key clips
  - .3 Closed support rails (for spans up to 1.5m)

- .4 Open support rails (for spans up to .75m)
- .5 Z-girts: Minimum 1.22mm thick (18 gauge) formed galvanized steel to ASTM A635M Grade 230, with Z275 coating.
- .6 Screw Fasteners: Stainless steel, of type to suit installation and to support all superimposed loads.
- .7 Flashings: as specified in Section 07 60 00
- .8 Insulation: as specified in Section 07 21 13
- .9 Air/Vapour Barrier: as specified in Section 07 27 00

### 3 EXECUTION

#### 3.1 Preparation

- .1 Obtain all dimensions from job site.
- .2 Ensure all structural support is aligned and condition is acceptable.
- .3 Inspect Clay Tile Wall Cladding System and all components before installation and verify that there is no shipping damage.
- .4 Do not install damaged Clay Tiles and components; repair or replace as required for smooth and consistent finished appearance.

#### 3.2 Installation

- .1 Examine surface to receive clay tile facade to assure that they are within surface smoothness tolerance, and free from conditions that will adversely affect execution or quality of work.
- .2 Ensure air/vapour barrier is installed as specified in Section 07 27 00
- .3 Install Z-girt framing at spacing as indicated on the approved shop drawings.
- .4 Install horizontal rails, level and true to line, spaced to suit Clay Tile Wall Cladding. Fasten through at each location where horizontal rails cross vertical framing members. Ensure all ends occur over vertical members.
- .5 Install first row of the Clay Tile Wall Cladding in base row channel using manufacturers' standard clips. Space clips as indicated on the reviewed shop drawings and to withstand all superimposed loading.
- .6 Install second and successive rows of Clay Tile Wall Cladding attached to horizontal rails with clips as indicated on the reviewed shop drawings and in accordance with manufacturer's recommendations. Install tile to patterns as indicated on the reviewed shop drawings.
- .7 Maintain joints, true to line and tight fitting.

- .8 Install top finishing channel and clips true to line in accordance with approved shop drawings.
- .9 Neatly and accurately cut tiles around protrusions such as windows, doors and the like. All cuts to be made with a proper clay tile cutting saw to ensure straight and true cuts.
- .10 Provide all components including drip and cap flashings, screws and fasteners as required to complete installation.
- .11 Protect work of other trades from damage resulting from work of this section. Make good all damage to work of other trades resulting from work of this section.
- .12 Cleaning as per Section 01 74 00: Cleaning and Waste Management.

**END OF SECTION**