

## **NOTES TO SPECIFIER**

General notes about the specifications and the reasons for them are listed here in general statements. Use this as a guide when choosing the correct selection of statements that apply to your job from the actual specifications.

A.S.T.M. C-90-96, UBC Standard 21-4

These specifications are based on A.S.T.M. C-90-96-. When particular features are designed such as weight classification, higher compressive strengths, surface textures, finish, color, fire resistance, insulation, acoustical properties, or other special features; such properties should be specified separately and clearly by the purchaser or architect. However, Orco Block should be consulted as to the availability of units having the desired features.

### **TYPE OF BLOCK**

Selecting the proper type of block for your job is very important. Texture means you are using slump block, split face, or precision block. Specify and indicate the proper type or types to be used and their locations.

### **SAMPLE PANEL**

A sample panel is important because it serves as a visual aid for workmanship for the masonry contractor and architect. This helps to eliminate later discussion about workmanship standards. In lieu of the sample panel, begin work in the most obvious section designated by the architect and this will serve as the sample panel.

### **CERTIFICATES**

Specify being a participant in the Q block test program because this is the way the owner and architect are sure they are getting a quality manufacturer who is tested every quarter rather than every year as the A.S.T.M. requires. Also in the Q block test program, the blocks are picked up from a job site rather than from the plant once a year as the A.S.T.M. requires. The companies who participate think enough of their product to pay for these additional tests themselves and are competitive with the manufacturers who do not participate.

### **COLOR**

Colored block usually has to be manufactured, especially on large products. It is also one of the first items to be installed. To avoid a possible delay in construction, select the block color before bidding the job. This will take the guesswork out of the bidding process because the cost of color in block does vary. This also alerts the general contractor to notify the masonry contractor, who in turn should be expedient in placing the order with his supplier.

## **ORCO BLOCK COMPANY'S SUGGESTED BLOCK MASONRY SPECIFICATION SECTION 04220 - CONCRETE UNIT MASONRY**

Conditions of the Contract and Division 1 General Requirements are a part of this section.

### **PART GENERAL**

#### **1.01 SUMMARY**

A. Provide materials, labor and equipment necessary for the completion of concrete masonry work as indicated on the drawings and specified herein.

#### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 07180- Water Repellents
- B. Section 08100- Metal Door Frames
- C. Section 09200- Plaster
- D. Section 09250-Gypsum Wallboard

#### 1.03 **CODES AND STANDARDS**

- A. Perform work with materials complying with ASTM, UBC and NCMA specifications.

#### 1.04 **INSPECTION**

- A. Conform with the requirements of Section 01401- Testing and Inspections.

#### 1.05 **SUBMITTAL**

- A. Submittal procedures and quantities are specified in Section 01300-Submittal.
- B. Submit copies of manufacturer's product information and installation instructions for each item and accessory.
- C. Submit samples of exposed masonry units, indicating special shapes, textures and colors.
- D. Expansion Joint and Control Joint Materials: Provide samples and Catalogue data.

#### 1.06 **JOB CONDITIONS**

Do not lay masonry when the ambient temperature is below 40 degrees F. or when it is likely that the ambient temperature will fall below 40 degrees F. during, or within 24-hours after masonry laying operations.

#### 1.07

#### **QUALITY ASSURANCE**

- A. Subcontractor Qualifications: Only skilled, first class masons shall be employed for masonry work. The Masonry Subcontractor shall have a minimum of six (6) years experience in masonry work of the type indicated for this project.
- B. Coordination with other Trades: Coordinate masonry work with other trades that interface with the masonry work or that require penetration Through or attachment to masonry.
- C. Mock-Ups: Before installation of concrete masonry erect one sample panel as follows:
  1. One panel shall be constructed to simulate the condition of concrete masonry walls. The panel shall be 8 feet long by 4 feet high and shall show the proposed color, texture, bond, pattern, mortar joints and workmanship for concrete masonry. Mock-up panel shall be constructed on "pallets" so it may be relocated as directed.
  2. Upon approval by the Architect, the sample panels shall become the standard of comparison for concrete masonry construction. After concrete masonry construction has been completed, remove sample panels and dispose of debris off the site.

## **PART 2            PRODUCTS**

### **2.01                    CONCRETE UNIT MASONRY**

A. Load bearing smooth face (light, medium, normal) weight concrete masonry units shall comply with ASTM C-90-96, UBC-21-4 (Type I or Type II). Provide required shapes such as corner, end units, radius

bases, bond beams, lintels, etc. Provide units open one or both ends, as required. Maximum linear shrinkage shall be .065% from standard oven dry condition. Concrete masonry units shall have a minimum net compressive strength of 1900 psi.

B. Masonry units shall be manufactured by Orco Block Company, Inc., or approved equal by Architect. Provide the following types of concrete masonry units:

1. Precision block

2. Splitfaced block

3. Slump block

4. Burnished block (Factory finishing process shall remove not more than 1/16" face of block exposing aggregate and cement leaving a smooth, flat, and level face, free of saw cut or other lines marring the face of block, and match sample in Architect's Office. The use of sawing cutting block face is not acceptable.)

5. Orco Shotblast (Factory sandblasted finishing process shall remove cementitious face of block exposing aggregate and cement, leaving a medium texture to match sample in Architect's Office. The use of field sand blasting of block face is not acceptable.)

6. OrcoBurst (Variegated Block shall have factory blended colors. Manufacturing process shall blend two or more separate colors, as selected by Architect, in random proportions within blocks to produce units with the each color marbled fully and continuously throughout. The use of post applied surface stains, paints or pigments on face is not acceptable.)

7. Sound block

8. Interlocking block

9. Veneer block

10. Expandable block

11. Other (Call Your Orco Representative for expanded product list.

C. Block colors shall be as follows or selected from manufacture's standard colors.

### **2.02                    MORTAR AND GROUT COMPONENTS**

A. Cement: Cement shall be portland cement conforming to ASTM C-150, Type I, II, III (UBC 19-1).

B. Aggregates: Aggregates for mortar conform to ASTM C-144. Aggregates for grout conform to ASTM C-404.

C. Lime: Hydrated lime shall conform to ASTM C51 (UBC 21-13).

D. Water: Clean and free from deleterious substances.

E. Sand: Comply with the "Standard Specifications for Aggregate for Masonry Mortar", ASTM C-144, except provide natural sand graded From coarse to fine within the following limits:

Passing No.	4 sieve	100%
Passing No.	8 sieve	95% to 100%
Passing No.	16 sieve	70% to 100%
Passing No.	30 sieve	40% to 75%
Passing No.	50 sieve	10% to 35%
Passing No.	100 sieve	3% to 15%

F. Pea Gravel: Graded with 100% passing the 3/8" sieve and not more than 5% passing the No. 8 sieve.

G. Package Materials to be delivered and stored in original packages until ready for use. Store cement, lime and aggregates in a manner which prevents deterioration or contamination.

H. Do not use material which is caked, lumpy, partially set or otherwise deteriorated.

## 2.03 MORTAR AND GROUT MIXES

A. Mortar (ASTM C-270, UBC 21-15):

1. Type S Mortar: 1 part portland cement; 1/4 to 1/2 part lime putty or hydrated lime; 2 1/4 to 3 times to sum of the volume of the cement and lime used. (Average compressive strength at 28 days shall be 1800 psi.)

B. Grout (ASTM C476, UBC 21-19): 1 part portland cement; 2 1/4 to 3 damp loose sand; 1 to 2 parts course aggregate.

1. Sufficient water shall be added to make a workable mix that will flow into joints of masonry without separation or segregation. When grout is to be placed in masonry units with typical rates of absorption the slump of the grout should be approximately 8 to 10 inches depending on temperature and humidity conditions.

## 2.04 REINFORCING STEEL

A. Reinforcing bars shall comply with ASTM A615, Grade 60, except that Number 4 and smaller bars shall be Grade 40.

# PART 3 EXECUTION

## 3.01 GENERAL WORKMANSHIP

A. Lay block in running bond with mortar for bed joints flattened, furrowing of bed joint mortar will not be permitted. Head joints solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shell. Shove blocks into place to compact the head joint mortar and improve the bed joint. Vertical cells shall have vertical alignment sufficient to maintain a clear, unobstructed continuous vertical cells for grouting. Remove overhanging mortar and debris from cells before grouting. Install hollow metal frames as indicated.

B. Accurately place reinforcing steel as shown on the drawings, positively secured and supported in such a manner that no movement occurs when the grout is poured. Reinforcing and tie wires shall be embedded in the grout. The thickness of the grout between masonry units and reinforcing shall be a minimum of one bar diameter.

C. Damp cure masonry work for a period of not less than 7 days after the work is completed. Make provisions for curing on Saturdays, Sundays and Holidays.

D. Replace defective blocks and blocks cut when cylinder is removed with new masonry which matches the existing.

### 3.02            **JOINTS**

1. Exposed vertical and horizontal joints shall be solidly filled as the work progresses. After joints are thumb print firm, they shall be tooled to a tight, smooth concave surface with an approved tool. Joint width shall be 3/8" inch, 1/2" for slump block.

2. Control of expansion joint shall be continuous through the mortar and masonry, at a maximum of 40'-0", unless shown otherwise. Horizontal reinforcement, except at roof or floor diaphragm, shall be continuous through the control joint.

### 3.03            **CURING**

A. Top of grout pour should be kept damp to prevent too rapid drying during hot or drying weather and drying winds.

### 3.04            **CLEANING**

A. Immediately after the wall has been fully grouted, the scum and stains which have percolated through the blocks and joints shall be hosed off with low pressure water through a jet nozzle.

B. Keep area clean and neat. After completion of grouting, clean up and remove resultant debris from the site.

- END OF SECTION -