

- 1 tints, dyes or pigments. Do not begin unit production until sample SRW units of the type,  
 2 face and color proposed for the project are approved.
- 3 Use SRW units that meet ASTM C1372 except for Table 1040-1 requirements.

<b>TABLE 1040-1 SRW UNIT REQUIREMENTS</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Compressive Strength for SRW Units	4,000 psi min	ASTM C140
Compressive Strength for Freeze-Thaw Durable SRW Units	5,500 psi min	ASTM C140
Absorption	5% max	ASTM C140
Durability for Freeze-Thaw Durable SRW Units	1% max <sup>A</sup>	ASTM C1262

- 4       A. Weight loss for 4 of 5 specimens after 150 cycles in water.

#### 5       **1040-5 CEMENT**

6 Portland cement shall meet Article 1024-1.

7 Masonry cement shall meet ASTM C91.

#### 8       **1040-6 HYDRATED LIME**

9 Hydrated lime shall meet ASTM C207 for Type N.

#### 10      **1040-7 MORTAR SAND**

11 Mortar sand shall meet Article 1014-1, except it shall meet the gradation requirements for  
 12 No. 4S sand shown in Table 1005-2.

#### 13      **1040-8 WATER**

14 Water shall meet Article 1024-4.

#### 15      **1040-9 MORTAR**

16 Proportion mortar used in all brick and block masonry by volume as shown below. Do not  
 17 add any more water than is necessary to make a workable mixture.

Mix No. 1: 1 part Portland cement  
               1/4 part hydrated lime  
               3 3/4 parts mortar sand (maximum)

Mix No. 2: 1 part Portland cement  
               1 part masonry cement  
               6 parts mortar sand (maximum)

18 Apply Articles 1040-4, 1040-5, 1040-6 and 1040-7 to all cement, hydrated lime, mortar sand  
 19 and water.

20 For the hydrated lime and cement portion of Mix No. 1, the Contractor may substitute  
 21 Type M or Type S masonry cement that meets ASTM C270 for Type S masonry cement the  
 22 minimum compressive strength of the test specimens shall be 2,500 psi at 28 days and the test  
 23 specimens shall be composed of one part Type S masonry cement and 3 parts sand. Furnish  
 24 a Type 3 certification for the Type M or Type S masonry cement in accordance with  
 25 Article 106-3.

26

## **SECTION 1042**

27

### **RIP RAP MATERIALS**

28 Use field stone or rough unhewn quarry stone for plain rip rap. Use stone that is sound,  
 29 tough, dense, resistant to the action of air and water and suitable in all other respects for the  
 30 purpose intended. Where broken concrete from demolished structures or pavement is  
 31 available, it may be used in place of stone provided that such use meets with the approval of

**Section 1043**

1 the Engineer. However, the use of broken concrete that contains reinforcing steel will not be  
2 permitted.

3 All stone shall meet the approval of the Engineer. While no specific gradation is required,  
4 there shall be equal distribution of the various sizes of the stone within the required size  
5 range. The size of an individual stone particle will be determined by measuring its long  
6 dimension.

7 Stone or broken concrete for rip rap shall meet Table 1042-1 for the class and size  
8 distribution.

<b>TABLE 1042-1</b>			
<b>ACCEPTANCE CRITERIA FOR RIP RAP AND STONE FOR EROSION CONTROL</b>			
<b>Class</b>	<b>Required Stone Sizes, inches</b>		
	<b>Minimum</b>	<b>Midrange</b>	<b>Maximum</b>
A	2	4	6
B	5	8	12
1	5	10	17
2	9	14	23

9 No more than 5.0% of the material furnished can be less than the minimum size specified nor  
10 no more than 10.0% of the material can exceed the maximum size specified.

11 **SECTION 1043**  
12 **AGGREGATE FROM CRUSHED CONCRETE**

13 **1043-1 GENERAL**

14 Aggregate from crushed concrete is a recycled product made by crushing concrete obtained  
15 from concrete truck clean out, demolition of existing concrete structures or pavement, or  
16 similar sources and transported from a crushing facility. It does not include concrete  
17 pavements that are rubblelized, broken or otherwise crushed in place on the roadway.

18 The crushed material must meet all sources approval requirements described in Sections 1005  
19 and 1006 with the exception of the sodium sulfate test requirement. Deleterious materials  
20 shall not be more than 3%.

21 Sampling and acceptance for the determination of gradation, LL and PI will be performed as  
22 described in the *Aggregate QC/QA Program Manual* and the *Aggregate Sampling Manual*.

23 **1043-2 AGGREGATE BASE COURSE**

24 The material shall meet the ABC gradation. The LL of the material shall be raised 5 points to  
25 no more than 35.

26 **1043-3 AGGREGATE SHOULDER BORROW**

27 The material shall meet Section 1019.

28 **1043-4 CLEAN COARSE AGGREGATE FOR ASPHALT**

29 The material shall meet the gradation of a standard size in Table 1005-1. Use of the material  
30 shall be approved by the Engineer, and the mix shall meet all requirements.

31 **1043-5 CLEAN COARSE AGGREGATE FOR CONCRETE**

32 The material shall meet the gradation of a standard size in Table 1005-1. Use of the material  
33 is restricted to Class B concrete mixes only. Use of the material shall be approved by the  
34 Engineer, and the concrete shall meet all requirements.