

PORTLAND CEMENT CONCRETE MIX DESIGN¹ (Continued)
MATERIALS SOURCE SUMMARY

• **COARSE AGGREGATE (703.02 AND AASHTO M 80)**

Name of supplier/producer: Anderson Crushing Co.
 Location of material source: Brush Flats, 5 km NE, Fort Collins, Hwy. 71
 Material type: Gravel Crushed gravel Crushed stone Crushed blast furnace slag
 Grading no.: 7

Sieve Analysis:

Sieve Designation	Percent Passing	Specification
50 mm	—	—
37.5 mm	—	—
25.0 mm	—	—
19.0 mm	<u>100</u>	<u>100</u>
12.5 mm	<u>74</u>	<u>70-100</u>
9.5 mm	<u>53</u>	<u>40-70</u>
4.75 mm	<u>10</u>	<u>0-15</u>
2.36 mm	<u>2</u>	<u>0-5</u>
1.18 mm	<u>1</u>	<u>—</u>

Properties:

- (1) Coal and lignite: 0.2 (%) (0-0.5)²
- (2) Deleterious chert: 0.0 (%) (0-3)³
- (3) Sodium sulfate soundness: 1.6 (%) (0-12)³
- (4) Clay lumps and friable particles: 0.1 (%) (0-2)³
- (5) LA abrasion: —, grading B, 21 % loss (0-40)³
- (6) Bulk specific gravity: 2.71
- (7) Absorption: 0.52 (%)
- (8) Bulk SSD specific gravity: 2.73
- (9) Dry rodded unit mass: 1724 (kg/m³)
- (10) Minus 75 µm: 1.0 (%) (0-1)³
- (11) Adherent fines: 0.1 (%) (0-1)³
- (12) Other: —

• **FINE AGGREGATE (703.01 AND AASHTO M 6)**

Name of supplier/producer: Anderson Crushing Co.
 Location of material source: Brush Flats, 5 km NE, Fort Collins, Hwy. 71
 Manufactured sand Natural sand Blend

Sieve Analysis:

Sieve Designation	Percent Passing	Accumulative Percent Retained
9.5 mm	<u>100</u>	<u>0</u>
4.75 mm	<u>97</u>	<u>3</u>
2.36 mm	<u>82</u>	<u>18</u>
1.18 mm	<u>61</u>	<u>39</u>
600 µm	<u>50</u>	<u>50</u>
300 µm	<u>22</u>	<u>78</u>
150 µm	<u>9</u>	<u>91</u>

Fineness modulus: 2.79

Properties:

- (1) Clay lumps: 0.0 (%) (0-3)³
- (2) Coal and lignite: 0.0 (%) (0-1)³
- (3) Sodium sulfate soundness: 3.2 (%) (0-10)³
- (4) Sand equivalent value, alt. 2: 79 (>75)³
- (5) Bulk specific gravity: 2.62
- (6) Bulk SSD specific gravity: 2.72
- (7) Absorption: 1.05 (%)
- (8) Organic impurities: none
- (9) Minus 75 µm: 1.0 (%) (0-3)³
- (10) Other: —

¹ For normal mass portland cement concrete (2300 - 2500 kg/m³).

² At five cycles.

³ Specification limits.