

Surfacing Aggregate Guidelines



Technical Data Sheet

Approved quartz silica, ceramic granule or mineral surfacing may be applied to ALT membranes to achieve an aesthetic finish and/or non-skid wearing surface. When specified, the approved aggregate is broadcast into an appropriate coat of ALT resin applied over clean cured ALT membrane. All surfacing aggregates shall be washed, kiln-dried, dust-free, suitable for broadcast, angular grain, and sized as follows:

Aggregate Selection Chart			
Application	Approximate Consumption	Quartz Silica Size	Basalt/Ceramic Granules Size
Vehicular Traffic Main Deck	1.4 lbs/ft ² (7.0 kg/m ²)	0.7 - 1.2 mm	0.5 - 1.2 mm
Pedestrian Traffic Option 2 Option 3	1.0 lbs/ft ² (5.0 kg/m ²) 1.4 lbs/ft ² (7.0 kg/m ²)	0.4 - 0.8 mm 0.7 - 1.2 mm	0.5 - 1.2 mm
Roofing & Waterproofing Option 1 Option 2 Option 3	1.0 lbs/ft ² (5.0 kg/m ²) 1.0 lbs/ft ² (5.0 kg/m ²) 1.4 lbs/ft ² (7.0 kg/m ²)	0.4 - 0.8 mm 0.4 - 0.8 mm 0.7 - 1.2 mm	0.5 - 1.2 mm
Note: See "Common Aggregate Gradations Chart" on page 2.			

Aggregate Broadcasting

Broadcast aggregate to excess in order to obtain full and uniform coverage. After curing, remove any loose aggregate by blowing with oil-free compressed air or vacuum.

Aggregate Seal Coat

ALT recommends seal-coating all aggregate surfacing using ALT Finish 220 Clear or ALT Finish 288 color pigmented high performance two-component, rapid-curing, acrylic finish. Seal-coating helps consolidate aggregate finish; protecting from wearing by traffic and weathering.

Seal-coating is a warranty requirement on all pedestrian and vehicular traffic bearing systems, but not required on normal roofing or waterproofing applications where ceramic granules or colored aggregates are used solely for aesthetic treatments.

Colored Quartz Silica

When applying a colored quartz silica finish, ALT recommends blending a minimum of two to three different colored aggregates to create a variegated finish. The colored aggregate should be broadcast into ALT Finish or other resin as recommended by ALT, and seal coated with ALT Finish 220 Clear.

Estimating Coverage

When using pure quartz silica aggregates, the average density is about 90 lbs. Per cubic foot. This will vary depending upon the thickness of the finished surface. To estimate the weight of silica sand aggregate needed to cover a given area, the following formula is suggested:

$$\text{Area (Sq. Ft.)} \times \text{thickness (inches)} \times 7.5 = \text{approximate weight of sand aggregate required in lbs.}$$

Common Surfacing Aggregate Gradations (wt % Passing)

ASTM E11 Sieve#	mm Open	In. Open	000	P40	00	00N	0	1	2	3	4
4	4.75	0.188								100	99
6	3.35	0.132							100	99	50
8	2.36	0.094						100	95	55	10
10	1.70	0.067		100			100	95	55	5	1
16	1.18	0.045		95		100	99	45	10	1	
20	0.85	0.033		80	100	99	50	5	1		
30	0.60	0.023	100	60	95	35	5	1			
40	0.42	0.016	95	35	40	5	1				
50	0.30	0.012	75	10	5	1					
60	0.25	0.010	45	5	2						
70	0.21	0.008	30	2	1						
100	0.15	0.006	5	1							

Note: Grade designations may vary by region. Compare suggest designation to sieve grading analysis of supplier. The following grade designations are recommended:

Grade 0: 0.4 – 0.8 mm

Grade 1: 0.7 – 1.2 mm

Grade 2: 0.5 – 1.6 mm

Specific gravity (ASTM C128): >2.50, Acid Solubility (AWWA B100): < 5%, Hardness (Mohs Scale): 6-8, Sphericity and Roundness (API RP56): 0.6, Sodium Soundness (ASTM C88): <15%, Test for Clay (ASTM C40 or C117): plate 1 and 2, Unit Weight and Voids (ASTM C29): 100 lb/cu ft, Chemical analysis: SiO₂: 98-99; Al₂O₃: 0.03-0.3, Fe₂O₃: 0.03-0.3, Na₂O, K₂O, TiO₂, MnO₂, MgO: to 0.05.

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