


3.2 SAMPLE MIX DESIGNS FOR BST LIGHTWEIGHT CONCRETE

The following table shows the mix proportions for one cubic metre⁽¹⁾ of various densities of BST Concrete made from BST#300 Lightweight Concrete Aggregate.

NOTE: Many premix concrete manufacturers have their own mix designs. Plant staff should refer to their technical divisions for specific mix designs as yields may vary depending on the nature of the materials used.

DENSITY (kg/m ³)	400	600	800	1,000	1,200	1,400	1,600	1,800	2,000
MIX PROPORTIONS									
Cement (kg) ⁽²⁾	250	350	350	350	450	450	450	450	500
10 mm Aggregate (kg) ⁽³⁾	-	-	-	-	-	-	550	700	800
Sand (kg) ⁽³⁾	40	120	320	540	640	850	520	580	620
BST Aggregate (litres) ⁽⁴⁾	1200	1100	975	900	800	700	600	450	300
Water (litres) ⁽⁵⁾	150	160	170	170	170	170	170	170	180
TYPICAL AVERAGE COMPRESSIVE STRENGTHS - MPa at 28 days									
Compressive strength (MPa)	0-0.5	1-2	3-4	6-8	8-10	12-14	14-18	22-25	25-30

NOTES

- 1 Trial mixes are recommended in all applications as variations in yield and density can occur with variations in local materials. The above mix proportions have been developed by concrete consultants to BST using Type GP cement and locally available Sydney aggregates. Abrams Marketing Pty Ltd, BST Suppliers Pty Ltd and BST Distributors offer no warranty that the above mix proportions will produce the same densities, yields and strengths with other materials.
- 2 Mix designs have been based on Type GP cement. Fly ash may be used as a partial replacement for cement. However, fly ash has been found to suppress some of the air entrained by the BST coating compound. This can result in underyielding and, consequently, higher than planned densities. Users should undertake trial mixes to verify mix proportions.
- 3 All aggregate weights are based on a saturated, surface dry condition. Sands should be 50% coarse and 50% fine.
- 4 BST #300 aggregate is supplied in 200 litre bags or bulk bags to 1.6 m³ capacity. When carrying out trial mixes, note that the BST volumes quoted above are based on a "settled" volume of BST. The loose volume of BST is 15% greater than the "settled" volume.
- 5 Water reducers should be used at the manufacturer's dose rate. 

More information

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