Recommended Mix Design to produce 1 m³ of CLC

NEOPOR® SYSTEM
CELLULAR LIGHTWEIGHT CONCRETE

Oven-Density in KG/m³			**400**	**600**	**800**	**1.000**	**1.200**	**1.400**	**1.600**	**2.350 Conv.concr.**
Sand	(kg)		–	210	400	560	750	950	1.100	1.950 (gravel+sand)
Cement	(kg)	+	300	310	320	350	360	380	400	320
Water in mortar	(kg)	+	110	110	120	120	140	150	160	180
Quantity of Foam	(Ltrs)		(800)	(715)	(630)	(560)	(460)	(370)	(290)	–
Water in Foam	(kg)	+	64	57	50	45	37	30	23	–
Wet Density	(kg/m³)		474	687	890	1.075	1.287	1.510	1.683	2.400
Foaming Agent use	(kg)		1,5	1,4	1,2	1,1	0,9	0,7	0,6	–
Water/Cement Ratio			0,58	0,54	0,53	0,47	0,49	0,47	0,46	0,56
Maximum Strength in	N/mm²		~ 1	~ 2	~ 3	~ 4	~ 8	~ 12	~ 18	25 +
Average Lambda	(W/m x K)		0,096	0,18	0,21	0,32	0,405	0,450	0,550	2,10

(Achieved strength at the lab with optimum sand and cement qualities) More cement will increase strength. Using lightweight aggregate in matrix of Cell. Concrete increases strength up to 500% in overall densities below 1.000 kg/m³

GENERAL REMARKS

Recommended weight of foam	Minimum 80 g/ltr
Crushed Sand might mechanically	destroy part of the foam
Water to process foam	Potable, if possible below 25°C
Dilution of foaming agent	1 part of Neopor to 40 parts of water
Recommended Cement	Portland CEM I 32,5R or higher grade, or similar
Recommended Sand	Washed river sand, Density/Sieve: Up to 1.000/up to 2mm
	Minimum 15-18% fines Up to 1.200/up to 4 mm
	Up to 1.400/up to 5 mm Up to 1.600/up to 6 mm

1 kg of Neopor foaming agent, diluted in 40 parts of water
yields approx. 510 litres of foam at 80 grams/litre

Captive densities are oven-dry (24h at 100°C)
Appr. 25% of the total volume of water (in mix and in foam) in relation to the weight of cement used will crystallize and therefore will have to be added to the dry-weight of the cement and sand used to reach the "oven-dry" density.