

Strength Class for concrete

<u>class</u>	<u>fck</u> Mpa	<u>Rck</u> Mpa	<u>fcm</u> Mpa	<u>fctm</u> Mpa	<u>fctk(5%)</u> Mpa	<u>fctk(95%)</u> Mpa	<u>fcfm</u> Mpa	<u>Ecm</u> Mpa
C16/20	16	20	24	1,90	1,33	2,48	2,29	28608
C20/25	20	25	28	2,21	1,55	2,87	2,65	29962
C25/30	25	30	33	2,56	1,80	3,33	3,08	31476
C28/35	28	35	36	2,77	1,94	3,60	3,32	32308
C32/40	32	40	40	3,02	2,12	3,93	3,63	33346
C35/45	35	45	43	3,21	2,25	4,17	3,85	34077
C40/50	40	50	48	3,51	2,46	4,56	4,21	35220
C45/55	45	55	53	3,80	2,66	4,93	4,55	36283
C50/60	50	60	58	4,07	2,85	5,29	4,89	37278

fck concrete strength (cylinder diam 150x300H mm) - if not available then $fck = 0,83 \cdot Rck$

Rck concrete strength (cube 150x150x150 mm)

fcm mean cylindrical strength - $fcm = fck + 8$ (N/mm²)

fctm mean tensile strength (axial) - $fctm = 0,30 \cdot fck^{(2/3)}$

fctk(5%) fractile 5% strength - $fctk5\% = 0,7 \cdot fctm$

fctk(95%) fractile 95% strength - $fctk95\% = 1,3 \cdot fctm$

fcfm mean tensile strength (by bending) - $fcfm = 1,2 \cdot fctm$

Ecm Modulus of elasticity - $Ecm = 22000 \cdot (fcm/10)^{0,3}$