

Schmidt Hammer Conversion Curve Database

1. Original Schmidt OS8000 Type N

Curve	Min R	Max R	Unit	Form factor	Equation
Proceq B (14 - 56 day mean)	15	55	N/mm2	150 mm cube	$F_{ck} = 1.05x(0.01078R^2 + 0.904R - 12.91)$
Proceq A (7 days mean)	15	55	N/mm2	150 mm cube	$F_{ck} = 1.05x(0.012516R^2 + 0.706R - 7.49)$
Portland Cement J	15	55	kg/cm2	150 mm cube	$F_{ck} = 1.05x(0.133R^2 + 8.82R - 122)$
Early strength J	15	55	kg/cm2	150 mm cube	$F_{ck} = 1.05x(-0.0803R^2 + 20R - 253)$
Blast Furnace J	15	55	kg/cm2	150 mm cube	$F_{ck} = 1.05x(0.2R^2 + 1.83R + 22.4)$
Averag Curve J	15	55	kg/cm2	150 mm cube	$F_{ck} = 1.05x(0.0485R^2 + 12.3R - 146)$
Characteristic strength R	20	75	N/mm2	150 mm cube	Step function (see below)

The characteristic strength curve is based on the reference table for the screening test provided in the Annex to EN13791. This curve provides a safe estimate with <5% probability of over-estimating the strength.

R value - Strength (N/mm2)

20 to 29 - <10
 30 to 32 - 10
 33 to 34 - 15
 35 to 37 - 20
 38 to 39 - 25
 40 to 42 - 30
 43 to 46 - 37
 47 to 48 - 45
 49 to 50 - 50
 51 to 52 - 55
 53 to 56 - 60
 57 to 59 - 67
 60 to 64 - 75
 65 to 68 - 85
 69 to 75 - 95

Impact angle conversion is applied to the measured R value before calculation of the compressive strength according to these curves. The impact angle correction is based on this formula:

$$R_{corr} = R + (-a_0 + R \cdot a_1) \cdot \sin(\text{angle})$$

a1+ 0.08

a0+ 7.1

a1- 0.043

a0- 4.3

Take a0+ and a1+ for angles $\geq 0^\circ$, a0- and a1- for angles $< 0^\circ$

2. Silver Schmidt OS8200 Type N

Curve	Min Q	Max Q	Unit	Form factor	Equation
<10% (old)	22	75	N/mm2	150 mm cube	$fck = 2.77e^{0.048Q}$
Ref EU (old)	21	62	N/mm2	150 mm cube	$fck = 1.8943e^{0.064Q}$
Ref CN	20	75	N/mm2	150 mm cube	$fck = 0.0244Q^2 - 0.6129Q + 10$
Ref RUS	20	77	N/mm2	150 mm cube	$fck = 0.03Q^2 - 0.86Q + 9.5$
Mean strength	10	75	N/mm2	150 mm cube	$fck = 3.6473e^{0.0475Q}$
Characteristic strength Q	10	95	N/mm2	150 mm cube	Step function (see below)

No angle correction is required for measurements with the Silver Schmidt.

Note! The Ref EU curve was determined with very high quality concrete and gives very high strengths.

The characteristic strength curve is based on the reference table for the screening test provided in the Annex to EN13791. This curve provides a safe estimate with <5% probability of over-estimating the strength.

Q value - Strength (N/mm2)

10 to 33 - <10
 34 to 39 - 10
 40 to 44 - 15
 45 to 48 - 20
 49 to 51 - 25
 52 to 55 - 30
 56 to 59 - 37
 60 to 61 - 45
 62 to 63 - 50
 64 to 65 - 55
 66 to 67 - 60
 68 to 70 - 67
 71 to 72 - 75
 73 to 74 - 85
 75 to 80 - 95