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GLOSSARY

- a** = Amount (in kg/m³) of SSD aggregate in 1 m³ of concrete
- a'** = Percentage of air by volume of concrete
- A_B** = Bolomey coefficient
- A_c** = Cross sectional area of the concrete
- A_d** = Admixture dosage in % by weight of cement
- a_m** = Amount (in kg/m³) of aggregate as received to be put into the mixer
- A_s** = Cross sectional area of steel reinforcing bars by percentage of the cross concrete structure
- a_w** = Water absorption
- b** = Solid volume (in L) of gravel (V_G) in 1 m³ of concrete
- b/b₀** = Bulk compacted volume of coarse aggregate in 1 m³ of concrete
- b₀** = Solid volume (in L) of gravel (V_G) in 1 m³ of bulk compacted aggregate
- c** = Amount of cement in concrete volume in kg/m³
- C** = Creep
- C_B** = Percentage of cement by weight of solids (aggregate + cement)
- C_c** = Specific heat of cement
- C_{con}** = Specific heat of concrete
- C_d** = Drying creep
- CEM I** = Portland cement
- CEM II A/S-B/S** = Slag Portland cements
- CEM II A/D** = Silica fume Portland
- CEM II A/P-B/P-A/Q-B/Q** = Natural (P) or industrial (Q) pozzolan Portland cements
- CEM II A/V-B/V-A/W-B/W** = Siliceous (V) or calcic (W) fly ash Portland cements
- CEM II A/T-B/T** = Calcined shale Portland cements
- CEM II A/L-B/L** = Limestone Portland cements
- CEM IIA/M-B/M** = Composite Portland cements
- CEM III A-B-C** = Blastfurnace slag cements
- CEM IV A-B** = Pozzolanc cements

CEM V A-B = Composite cements

C_G = Specific heat of gravel

C_p = Pure or basic creep

C_s = Specific heat of sand

C_w = Specific heat of water

d = size of aggregate passing to a sieve opening

D = Durability

d_a = Density of the SSD aggregate (in kg/L)

d_b = Bulk density of SSD compacted aggregate (in kg/m³)

d_c = Density of cement in kg/L

D_c = Degree of compaction or degree of consolidation

D_{ht} = Degree of hardening at the time t

D_{max} = Maximum size of the aggregate

d_w = Density of water in kg/L

d_{con} = Density of the SSD concrete in kg/m³

d_{fa} = Density of fly ash in kg/L

d_{fcon} = Density of the SSD fully compacted concrete in kg/m³

d_G = Density of the SSD gravel in kg/L

d_s = Density of the sand (in kg/L) in the SSD condition

d_{sf} = Density of silica fume in kg/L

E = Elastic modulus

E_a = Elastic modulus of the aggregate

E_{con} = Elastic modulus of the concrete

$E_{con/t}$ = Elastic modulus of the concrete at the time t

E_{cp} = Elastic modulus of the cement paste

E_{cpt} = Elastic modulus of the cement paste at the time t

E_{is} = Initial static elastic modulus

E_{ss} = Secant static elastic modulus

F_c = Compacting factor

f_{ci} = Compressive strength of the individual specimen

- f_{ck} = Characteristic strength
- f_{cms} = Mean compressive strength at the end of the steam curing
- f_{cmst} = Mean compressive strength at the time t of a steam cured concrete
- f_{cms28} = Mean compressive strength at 28 days of a steam-cured concrete
- f'_{cm28} = Mean compressive strength at 28 days of a concrete cured at 20°C
- f_{cu} = Cube compressive strength
- $f_{cu/ck}$ = Cube characteristic strength
- f_{cyl} = Cylinder compressive strength
- $f_{cyl/ck}$ = Cylinder characteristic strength
- f_i = Shrinkage coefficients to relate the shrinkage of reinforced concrete structures with the standard laboratory shrinkage measured at 6 months (S_0)
- f_{mc} = Mean compressive strength
- f_{mc28} = 28-day mean compressive strength
- G = Amount (in kg) of SSD coarse aggregate (gravel) in 1 m³ of concrete
- G' = Amount (in kg) of bone-dry coarse aggregate (gravel) in 1 m³ of concrete
- g_i = Creep coefficients to relate the creep of reinforced concrete structures with the concrete modulus of elasticity (E_{con}) and the applied compressive stress (σ_c)
- G_m = Amount (in kg/m³) of coarse aggregate (gravel) to be put into the mixer
- h = Humidity of the aggregate (in % by bone-dry aggregate)
- h_G = Humidity of the gravel (in % by bone-dry gravel)
- h_m = Fictitious thickness
- h_s = Humidity of the sand (in % by bone-dry sand)
- K = Probability factor to determine the characteristic strength
- K_c = Factor of correlation between creep (C) and elastic strain (ϵ_{el})
- K_E = Factor of correlation between elastic modulus (E_{con}) and compressive strength (f_c)
- K_f = Factor of correlation between flexural (f_f) and compressive strength (f_c)
- K_p = Permeability coefficient

K_t	= Factor of correlation between tensile (f_t) and flexural strength (f_f)
l	= Correction coefficient of thermal concrete conductivity (λ) as a function of the relative humidity (RH)
m_d	= Mass of the bone-dry aggregate
M_f	= Fineness modulus
M_{fB}	= Fineness modulus of an ideal aggregate according to Bolomey
M_{fG}	= Fineness modulus of the gravel
M_{fs}	= Fineness modulus of the sand
m_h	= Mass of the aggregate as received
m_{SSD}	= Mass of the aggregate in the SSD condition
P_d	= Percentage of aggregate passing of at the sieve opening d in mm
P_{sd}	= Percentage of solids (cement + aggregate) passing at the sieve opening d (in mm)
$P_{0.3}$	= Percentage of aggregate passing at the sieve opening of 0.3 mm
$P_{0.15}$	= Passing of aggregate passing at the sieve opening of 0.15 m
q	= Correction factor to determine b/b_0
Q	= Heat of hydration
Q_t	= Unitary heat of hydration (in kJ/kg) of cement at the time t
$Q_{TOT/t}$	= Heat of hydration (in kJ/m ³) developed in 1 m ³ of concrete at the time t
RH	= Relative Humidity
s	= Amount (in kg) of the SSD sand in 1 m ³ of concrete
S	= Drying shrinkage
s'	= Amount (in kg) of bone-dry sand in 1 m ³ of concrete
s_m	= Amount of sand (in kg/m ³) to be put into the mixer
SSD	= Saturated and surface-dry condition
S_0	= Standard shrinkage of concrete specimens measured at 6 months
S1	= Consistence class of stiff concrete : slump = 1-4 cm
S2	= Consistence class of stiff concrete : slump = 5-9 cm
S3	= Consistence class of stiff concrete : slump = 10-15 cm
S4	= Consistence class of stiff concrete : slump = 16-20 cm
S5	= Consistence class of stiff concrete : slump \geq 21 cm

t	= Time of curing
t'	= Time after loading
t_c	= Type of cement
T_c	= Temperature of cement in °C
T_{con}	= Temperature of concrete in °C
T_s	= Temperature of sand in °C
t_{smax}	= Time of steam curing at the maximum temperature
t_{s1}	= Time of preliminary curing in a steam curing process
T_G	= Temperature of gravel in °C
T_{max}	= Maximum temperature in a steam curing process
T_w	= Temperature of mixing water in °C
T_{wG}	= Temperature of water in the gravel in °C
T_{ws}	= Temperature of water in the sand in °C
v	= Heating rate (in °C/hr) in a steam curing process
V_a	= Volume of SSD aggregate (in L/m ³) in 1 m ³ of concrete
V_c	= Volume of cement (in L/m ³) in 1 m ³ of concrete
V_{con}	= Volume (in L) of 1 m ³ of concrete
V_G	= Volume of SSD gravel (in L/m ³) in 1 m ³ of concrete
V_s	= Volume of SSD sand (in L/m ³) in 1 m ³ of concrete
w	= Amount of mixing water in 1 kg/m ³ of concrete
W	= Workability of fresh concrete
w_a	= Amount of water (kg/m ³) put in the mixer through wet aggregate
w_G	= Amount of water (kg/m ³) put in mixer trough wet gravel
w_m	= Amount of liquid water (in kg/m ³) to be put in the mixer
W_m	= Workability after mixing
W_p	= Workability at the placement time
w_s	= Amount of water (kg/m ³) put in mixer trough wet sand
XA	= Exposure class of concrete in a chemically aggressive environment
XC	= Exposure class of concrete in contact with open air (carbonation)
XD	= Exposure class of concrete in contact with chloride salts other than those of sea water

XF	= Exposure class of concrete exposed to freezing-thawing cycles
XS	= Exposure class of concrete exposed to sea water
XO	= Exposure class of concrete in a dry closed environment
α	= Degree of cement hydration
B	= Coefficient of thermal dilatation
δ	= Standard deviation
δ_T	= Thermal diffusivity of concrete
Δ_{fc}	= Strength decrease due to un-complete compaction ($D_c < 1$) or the presence of entrained air
ΔW	= Workability loss
ΔT	= Temperature change
ϵ	= Unitary strain
ϵ_{el}	= Elastic strain
λ	= Coefficient of thermal conductivity of concrete
σ_c	= Compressive stress
σ_f	= Flexural stress
σ_t	= Tensile stress