Table 1. Physical properties of aggregates.

Property [1]	CA	UA
Without adjusted granulometric profiles		
M_{OD} (Kg/m^3)	1182.0	1735.1
M_{SSD} (Kg/m^3)	1399.1	1860.8
Void content (%)	35.3	32.9
With adjusted granulometric profiles		
D_{OD} (Kg/m^3)	1820.9	2581.6
D_{SSD} (Kg/m^3)	2155.4	2623.6
Water absorption coefficient (%)	18.4	1.6
Fineness modulus Materials	2.8	2.4
Particles < 75-μm (sieve No. 200) (%)	8.2	2.9

[1] According to ASTM (C128 [35], C136 [36] y C117 [37]).

Table 2. Characteristic and proportions of the mixtures of studio.

Materials (g)		Classification and proportions of the mixtures					
		UM	RCM10	RCM20	RCM30	RCM50	RCM100
Water		334	390	355	373	397	476
Cement		400	433	381	372	348	323
UA [1]	< Sieve No. 30	800	780	610	521	348	0
	> Sieve No. 30	800	780	610	521	348	0
CA [1]	< Sieve No. 30	0	69	122	179	278	517
	> Sieve No. 30	0	104	183	268	417	775

[1] Dry condition.

Table 3. Density in hardened state of the RCM.

Study variables	ρ (g/cm^3)
UM	1.950
RCM10	1.948
RCM20	1.894
RCM30	1.864
RCM50	1.798
RCM100	1.529

Table 4. Properties of σ-ε of the RCM.

Study variables	fm (MPa)	0.40 fm (MPa)	E (MPa)	T (MPa)	U_r (MPa)	$\varepsilon_{elastic}$ (mm/mm)	$\varepsilon_{max.}$ (mm/mm)	Eo (MPa)
UM	30.87	11.59	26252	0.024	0.003	0.0004	0.0014	23619
RCM10	31.33	11.89	26515	0.029	0.003	0.0005	0.0016	21710
RCM20	30.95	12.03	26251	0.035	0.003	0.0005	0.0018	20249
RCM30	29.02	11.58	24065	0.025	0.003	0.0005	0.0016	21107
RCM50	26.58	9.85	21731	0.022	0.003	0.0005	0.0015	18940
RCM100	20.20	7.66	14194	0.010	0.002	0.0005	0.0012	15891

Table 5. Cc values for application in EPr equations of the RCM.

Study variables	Corrector coefficient (C_C for mechanical properties of RCM)			
	E	$\varepsilon_{elastic}$	U_r	T
UM	0.9817	0.9380	1.0086	0.6651
RCM10	0.9915	0.9553	1.0572	0.8075
RCM20	0.9817	0.9734	1.0855	0.9880
RCM30	0.8999	1.0380	1.0716	0.7127
RCM50	0.8126	0.9910	1.0291	0.6129
RCM100	0.5308	1.1043	0.7480	0.2968

Table 6. Values of the constants for each of the curves.

PE_r of the curve σ-ε	Application	T_C (for the σ-ε curve of the RCM)	A	B	C	D
PE_r for $\sigma_{elastic}$	$0 \le XX\% \le 50$	16337	0.893	0.242	-0.704	1.253
PE_r for $\sigma_{elastic}$	XX% = 100%	16337	1.245	0.253	-0.704	1.242
PE_r for σ_{max}	$0 \le XX\% \le 100$	13113	1.179	0.253	-0.704	1.242

Table 7. Values Cc for the different percentages of CA.

XX%	Corrector coefficient (C_C for σ-ε curve of the RCM)	
	C_C para PE_r hasta $\sigma_{elastic}$	C_C para PE_r hasta $\sigma_{max.}$
0	1.7739	1.0962
10	1.8005	1.1126
20	1.7788	1.0992
30	1.6677	1.0306
50	1.5276	0.9440
100	0.7174	0.7174