

Appendix 3 Concrete mix designs

Mix design

# Project	ACRGTQ	Batch volume (litres)	25		
# Mix design	Source #5 32 MPa C-2	SSD Qty for 1 m³	SSD Qty for the mix	Adjusted Wet Qty	Qty Volume (litre)
W/ C	0,45	Density (g/ cm³)			
	Description				
Cement	GU (General Use) from CRH	3,150	365,0	9,1	2,9
Fly ash		2,600			
Water		1,000	165,0	4,125	4,112
Sand #1	Sand from Lafarge	2,710	810,0	20,25	20,28
Sand #2		2,646	0,0	0,00	
Coarse aggregate	5-14	2,790	988,3	24,71	24,68
		2,650			
		Dosage ml / 100kg binder			
Air-entraining	Master Air AE 210	1,00	30,000	109,5	2,74
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5	22,8
Setting retardant		1,00	0,0	0,0	
	Dry	0,41			
Superplasticizer		0,00	0,00	0,0	
Volume of air			65,0	litres	1,63
Note: SP liquid fraction is subtracted		Volume	1,0000	m³	24,9898
Note : Don't forget to enter a density value		Weight	2329	kg	
		Density	2329	kg/ m³	

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		255,2	% cement paste : 28,1%
Receptacle weight + Wet aggregate (W a)	1140,3		936,1	% sand : 45,0%
Receptacle weight + Dry aggregate (D a)	1136,0		932,5	% coarse aggregate : 55,0%
Absorption (A) (%)	0,46		0,64	% aggregate vol. 54,2%
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,53	% mortar vol. 58,0%
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,035		-0,021	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	20,28		24,68	
Total added water by aggregates	0,013	kg		

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m³)				
Density (kg/m³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25	
# Mix design	Source #11 32 MPa C-2	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,45	Density (g/ cm ³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	365,0	9,1
Fly ash		2,600		
Water		1,000	165,0	4,125
Sand #1	Sand from Lafarge	2,710	806,0	20,15
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,770	985,3	24,63
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	109,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			65,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2322	kg
		Density	2322	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		283,6	
Receptacle weight + Wet aggregate (W a)	1140,3		990,8	
Receptacle weight + Dry aggregate (D a)	1136,0		985,7	
Absorption (A) (%)	0,46		0,49	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,73	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,035		0,058	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	20,18		24,69	
Total added water by aggregates	0,093			kg

% cement paste : 28,1%

% sand : 45,0%

% coarse aggregate : 55,0%

% aggregate vol. 54,5%

% mortar vol. 57,8%

(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C			
Air content (%)			
Slump test (mm)			
Weight of air-meter (empty) (kg)			
Weight of air-meter (kg)			
Volume of air-meter (m ³)			
Density (kg/m ³)			
Temperature of concrete (°C)			
Ambient temperature in laboratory (°C)			
Mixer	Planetary		

Performed by:		Comments :	
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ		Batch volume (litres)		25	
# Mix design	Source #14 32 MPa C-2		SSD Qty	SSD Qty	Adjusted	Qty
W/ C	0,45		for	for the	Wet Qty	Volume
	Description	Density (g/ cm ³)	1 m ³	mix		(litre)
Cement	GU (General Use) from CRH	3,150	365,0	9,1		2,9
Fly ash		2,600				
Water		1,000	165,0	4,125	4,062	4,1
Sand #1	Sand from Lafarge	2,710	797,5	19,94	19,97	7,4
Sand #2		2,646	0,0	0,00		
Coarse aggregate	5-14	2,720	976,0	24,40	24,43	9,0
		2,650				
			Dosage ml / 100kg binder			
Air-entraining	Master Air AE 210	1,00	30,000	109,5	2,74	0,003
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5	22,8	0,023
Setting retardant		1,00	0,0	0,0		
	Dry	0,41				
Superplasticizer		0,00	0,00	0,0	0,0	
Volume of air			65,0	litres		1,63
Note: SP liquid fraction is subtracted			Volume	1,0000	m ³	24,9604
Note : Don't forget to enter a density value			Weight	2305	kg	
			Density	2305	kg/ m ³	

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		268,3	% cement paste : 28,1%
Receptacle weight + Wet aggregate (W a)	1140,3		919,5	% sand : 45,0%
Receptacle weight + Dry aggregate (D a)	1136,0		915,7	% coarse aggregate : 55,0%
Absorption (A) (%)	0,46		0,47	% aggregate vol. 54,9%
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,59	% mortar vol. 57,5%
Water adduced by aggregates (If Wc < A , use 80 % of adduced water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,034		0,028	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	19,97		24,43	
Total added water by aggregates	0,063			kg

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25	
# Mix design	Source #17 32 MPa C-2	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,45	Density (g/ cm ³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	365,0	9,1
Fly ash		2,600		
Water		1,000	165,0	4,125
Sand #1	Sand from Lafarge	2,710	797,5	19,94
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,720	976,0	24,40
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	109,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			65,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2305	kg
		Density	2305	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		251,9	
Receptacle weight + Wet aggregate (W a)	1140,3		994,5	
Receptacle weight + Dry aggregate (D a)	1136,0		990,5	
Absorption (A) (%)	0,46		0,54	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,54	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,034		0,000	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	19,97		24,40	
Total added water by aggregates	0,035	kg		
				% cement paste : 28,1%
				% sand : 45,0%
				% coarse aggregate : 55,0%
				% aggregate vol. 54,9%
				% mortar vol. 57,5%

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25	
# Mix design	Source #19 32 MPa C-2	SSD Qty for 1 m³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,45	Density (g/ cm³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	365,0	9,1
Fly ash		2,600		
Water		1,000	165,0	4,125
Sand #1	Sand from Lafarge	2,710	766,8	19,17
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,530	936,5	23,41
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	109,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			65,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m³
		Weight	2234	kg
		Density	2234	kg/ m³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		263,5	
Receptacle weight + Wet aggregate (W a)	1140,3		1005,6	
Receptacle weight + Dry aggregate (D a)	1136,0		997,1	
Absorption (A) (%)	0,46		0,50	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		1,16	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,033		0,153	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	19,20		23,57	
Total added water by aggregates	0,186	kg		
				% cement paste : 28,1%
				% sand : 45,0%
				% coarse aggregate : 55,0%
				% aggregate vol. 56,7%
				% mortar vol. 56,4%

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m³)				
Density (kg/m³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25	
# Mix design	Source #22 32 MPa C-2	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,45	Density (g/ cm ³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	365,0	9,1
Fly ash		2,600		
Water		1,000	165,0	4,125
Sand #1	Sand from Lafarge	2,710	796,0	19,90
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,710	974,0	24,35
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	109,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			65,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2301	kg
		Density	2301	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		458,6	
Receptacle weight + Wet aggregate (W a)	1140,3		1218,6	
Receptacle weight + Dry aggregate (D a)	1136,0		1218,2	
Absorption (A) (%)	0,46		0,37	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,05	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,034		-0,062	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	19,93		24,27	
Total added water by aggregates	-0,027			kg

% cement paste : 28,1%

% sand : 45,0%

% coarse aggregate : 55,0%

% aggregate vol. 55,0%

% mortar vol. 57,5%

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:		Comments :	
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25		
# Mix design	Source #23 32 MPa C-2	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty	Qty Volume (litre)
W/ C	0,45	Density (g/ cm ³)			
	Description				
Cement	GU (General Use) from CRH	3,150	365,0	9,1	2,9
Fly ash		2,600			
Water		1,000	165,0	4,125	4,186
Sand #1	Sand from Lafarge	2,710	796,0	19,90	19,93
Sand #2		2,646	0,0	0,00	
Coarse aggregate	5-14	2,710	974,0	24,35	24,23
		2,650			
		Dosage ml / 100kg binder			
Air-entraining	Master Air AE 210	1,00	30,000	109,5	2,74
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5	22,8
Setting retardant		1,00	0,0	0,0	
	Dry	0,41			
Superplasticizer		0,00	0,00	0,0	
Volume of air			65,0	litres	1,63
Note: SP liquid fraction is subtracted		Volume	1,0000	m ³	25,0304
Note : Don't forget to enter a density value		Weight	2301	kg	
		Density	2301	kg/ m ³	

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		255,7	% cement paste : 28,1%
Receptacle weight + Wet aggregate (W a)	1140,3		1045,2	% sand : 45,0%
Receptacle weight + Dry aggregate (D a)	1136,0		1042,3	% coarse aggregate : 55,0%
Absorption (A) (%)	0,46		0,86	% aggregate vol. 55,0%
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,37	% mortar vol. 57,5%
Water adduced by aggregates (If Wc < A , use 80 % of adduced water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,034		-0,095	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	19,93		24,23	
Total added water by aggregates	-0,061	kg		

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	25	
# Mix design	Source #26 32 MPa C-2	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,45	Density (g/ cm ³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	365,0	9,1
Fly ash		2,600		
Water		1,000	165,0	4,125
Sand #1	Sand from Lafarge	2,710	831,0	20,78
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,930	1015,0	25,38
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	109,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	912,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			65,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2377	kg
		Density	2377	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,1		456,2	
Receptacle weight + Wet aggregate (W a)	1140,3		1203,3	
Receptacle weight + Dry aggregate (D a)	1136,0		1199,8	
Absorption (A) (%)	0,46		0,63	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,47	
Water added by aggregates (If Wc < A , use 80 % of adduced water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,036		-0,032	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	20,81		25,33	
Total added water by aggregates	0,004			kg

% cement paste : 28,1%

% sand : 45,0%

% coarse aggregate : 55,0%

% aggregate vol. 53,0%

% mortar vol. 58,8%

(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C			
Air content (%)			
Slump test (mm)			
Weight of air-meter (empty) (kg)			
Weight of air-meter (kg)			
Volume of air-meter (m ³)			
Density (kg/m ³)			
Temperature of concrete (°C)			
Ambient temperature in laboratory (°C)			
Mixer	Planetary		

Performed by:		Comments :	
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	35		
# Mix design	Source #5 30 MPa F-1	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty	Qty Volume (litre)
W/ C	0,50	Density (g/ cm ³)			
	Description				
Cement	GU (General Use) from CRH	3,150	335,0	11,7	3,7
Fly ash		2,600			
Water		1,000	167,5	5,863	5,838
Sand #1	Sand from Lafarge	2,710	884,2	30,95	31,00
Sand #2		2,646	0,0	0,00	
Coarse aggregate	5-14	2,790	959,7	33,59	33,55
		2,650			
		Dosage ml / 100kg binder			
Air-entraining	Master Air AE 210	1,00	30,000	100,5	3,52
Water-reducer	Pozzolith 210 BASF	1,00	250,00	837,5	29,3
Setting retardant		1,00	0,0	0,0	
	Dry	0,41			
Superplasticizer		0,00	0,00	0,0	
Volume of air			55,0	litres	1,93
Note: SP liquid fraction is subtracted		Volume	1,0000	m ³	34,9837
Note : Don't forget to enter a density value		Weight	2347	kg	
		Density	2347	kg/ m ³	

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,6		255,2	% cement paste : 27,4%
Receptacle weight + Wet aggregate (W a)	1140,3		936,1	% sand : 48,0%
Receptacle weight + Dry aggregate (D a)	1136,0		932,5	% coarse aggregate : 52,0%
Absorption (A) (%)	0,46		0,64	% aggregate vol. 51,3%
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,53	% mortar vol. 60,0%
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,053		-0,029	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	31,00		33,55	
Total added water by aggregates	0,024	kg		

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:			Comments :
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	35	
# Mix design	Source #14 30 MPa F-1	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,50	Density (g/ cm ³)		Qty Volume (litre)
	Description			
Cement	GU (General Use) from CRH	3,150	335,0	11,7
Fly ash		2,600		
Water		1,000	167,5	5,863
Sand #1	Sand from Lafarge	2,710	873,7	30,58
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,720	946,0	33,11
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	100,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	837,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			55,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2323	kg
		Density	2323	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,6		268,3	
Receptacle weight + Wet aggregate (W a)	1140,3		919,5	
Receptacle weight + Dry aggregate (D a)	1136,0		915,7	
Absorption (A) (%)	0,46		0,47	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,59	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,053		0,039	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	30,63		33,15	
Total added water by aggregates	0,091	kg		

% cement paste : 27,4%

% sand : 48,0%

% coarse aggregate : 52,0%

% aggregate vol. 51,9%

% mortar vol. 59,6%

(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C			
Air content (%)			
Slump test (mm)			
Weight of air-meter (empty) (kg)			
Weight of air-meter (kg)			
Volume of air-meter (m ³)			
Density (kg/m ³)			
Temperature of concrete (°C)			
Ambient temperature in laboratory (°C)			
Mixer	Planetary		

Performed by:		Comments :	
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	35	
# Mix design	Source #19 30 MPa F-1	SSD Qty for 1 m ³	SSD Qty for the mix	Adjusted Wet Qty
W/ C	0,50	Density (g/ cm ³)	Qty Volume (litre)	
	Description			
Cement	GU (General Use) from CRH	3,150	335,0	11,7
Fly ash		2,600		
Water		1,000	167,5	5,863
Sand #1	Sand from Lafarge	2,710	840,5	29,42
Sand #2		2,646	0,0	0,00
Coarse aggregate	5-14	2,530	911,0	31,89
		2,650		
		Dosage ml / 100kg binder		
Air-entraining	Master Air AE 210	1,00	30,000	100,5
Water-reducer	Pozzolith 210 BASF	1,00	250,00	837,5
Setting retardant		1,00	0,0	0,0
	Dry	0,41		
Superplasticizer		0,00	0,00	0,0
Volume of air			55,0	litres
Note: SP liquid fraction is subtracted				
Note : Don't forget to enter a density value				
		Volume	1,0000	m ³
		Weight	2255	kg
		Density	2255	kg/ m ³

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,6		263,5	
Receptacle weight + Wet aggregate (W a)	1140,3		1005,6	
Receptacle weight + Dry aggregate (D a)	1136,0		997,1	
Absorption (A) (%)	0,46		0,50	
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		1,16	
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,051		0,209	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	29,47		32,09	
Total added water by aggregates	0,260			kg

% cement paste : 27,4%

% sand : 48,0%

% coarse aggregate : 52,0%

% aggregate vol. 53,7%

% mortar vol. 58,4%

	(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C				
Air content (%)				
Slump test (mm)				
Weight of air-meter (empty) (kg)				
Weight of air-meter (kg)				
Volume of air-meter (m ³)				
Density (kg/m ³)				
Temperature of concrete (°C)				
Ambient temperature in laboratory (°C)				
Mixer	Planetary			

Performed by:		Comments :	
Compiled by:			
Verified by:			

Mix design

# Project	ACRGTQ	Batch volume (litres)	35		
# Mix design	Source #23 30 MPa F-1	SSD Qty for 1 m³	SSD Qty for the mix	Adjusted Wet Qty	Qty Volume (litre)
W/ C	0,50	Density (g/ cm³)			
	Description				
Cement	GU (General Use) from CRH	3,150	335,0	11,7	3,7
Fly ash		2,600			
Water		1,000	167,5	5,863	5,939
Sand #1	Sand from Lafarge	2,710	871,2	30,49	30,54
Sand #2		2,646	0,0	0,00	
Coarse aggregate	5-14	2,710	945,0	33,08	32,91
		2,650			
		Dosage ml / 100kg binder			
Air-entraining	Master Air AE 210	1,00	30,000	100,5	3,52
Water-reducer	Pozzolith 210 BASF	1,00	250,00	837,5	29,3
Setting retardant		1,00	0,0	0,0	
	Dry	0,41			
Superplasticizer		0,00	0,00	0,0	
Volume of air			55,0	litres	1,93
Note: SP liquid fraction is subtracted		Volume	1,0000	m³	35,0353
Note : Don't forget to enter a density value		Weight	2320	kg	
		Density	2320	kg/ m³	

	Sand #1	Sand #2	Coarse aggregate	
Receptacle weight (W r)	456,6		255,7	% cement paste : 27,4%
Receptacle weight + Wet aggregate (W a)	1140,3		1045,2	% sand : 48,0%
Receptacle weight + Dry aggregate (D a)	1136,0		1042,3	% coarse aggregate : 52,0%
Absorption (A) (%)	0,46		0,86	% aggregate vol. 52,0%
Water content Wc=(W _w - W d)/ (W d - W r)	0,63		0,37	% mortar vol. 59,5%
Water added by aggregates (If Wc < A , use 80 % of added water)				
[(Wc - A)/ 100 x W _{SSD}]/ (1 + A)	0,052		-0,129	
Corrected weight of aggregates				
[(1 + Wc/ 100) x W _{SSD}]/ (1 + A)	30,54		32,91	
Total added water by aggregates	-0,076	kg		

(H : min)	(min)	(min)	Mixing sequence and incorporation of admixture
Contact W/ C			
Air content (%)			
Slump test (mm)			
Weight of air-meter (empty) (kg)			
Weight of air-meter (kg)			
Volume of air-meter (m³)			
Density (kg/m³)			
Temperature of concrete (°C)			
Ambient temperature in laboratory (°C)			
Mixer	Planetary		

Performed by:		Comments :	
Compiled by:			
Verified by:			