

Case	Application	Basic requirements according to SIA 262.051 (EN-206) 2021 edition					Additional requirements (if necessary)
		Strength class*	Exposure class(es) (durability)	D _{max} mm	Class of chlorides content	Consistence Class	Other properties + cure (development of resistance, heat of hydration, shrinkage, etc.)
1	Administrative building slab (prestressed concrete, thickness 0.25 m, concrete placed by crane)	C25/30 or C30/37	XC1(CH) ***	32	Cl 0.10	C3 (S4)	- Protection against plastic shrinkage (early drying) → spray on curing agent and/or cover with plastic sheeting. *** if low shrinkage required: → limit water dosage by specifying e.g. exposure class XC4(CH) = Sort C - AAR resistance → SIA CT 2042
2	Covered trench road (L=1.5 km) walls and top slab in reinforced concrete pumped concrete, elements thickness of 0.50 to 1 m. Switzerland, alt. 700 m. Surveys indicate the presence of sulfated water in the soil, measured sulfates content = 1'150 mg/L	C30/37 or C35/45	For walls XC4 (CH) + XD3 (CH) + XF4(CH) + XA2s(CH) For top slab XC3 (CH) + XD1 (CH) + XF2(CH) + XA2s(CH)	32	Cl 0.10	S4 (C3)	- Stripping after at least 2 days, followed by an extended cure of 1 to 2 weeks using a cure cart. - Moderate hydration heat - Low shrinkage and risk of cracking - Freeze/thaw resistance in the presence of de-icing salts: high - AAR resistance → SIA CT 2042

* **The strength class** is set arbitrarily but plausibly for the purposes of this exercise. In reality, the required strength derives from the needs of the project, according to the engineer's design and calculations.