Elkem Microsilica®
CONCRETE

NordHordland Bridge

C4-20 Reference Project

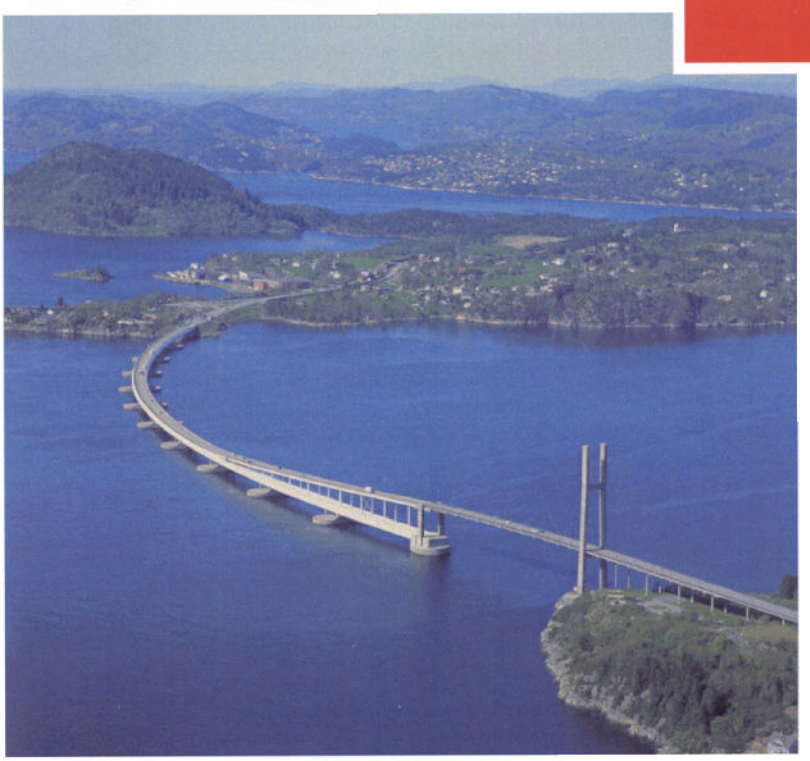
WEB ADDRESS:www.aasjakobsen.no/Bridges/References/Nordhordland

CONCRETE SUPPLY:Aker Betong, Indre Arna

High Bridge:	(kg/ m³)
Cement, HS 65	430
Silica	35
P, BV-40 1.5 litre	
SP, Sikament 110	5.5 litre
L, Sika AER 1:9	0.1 litre
Sand 0-5mm	630
Leca 4-8mm	295
Leca 8-12mm	275
Water total	195

Nominal :w/(c+2s) = 0.39
Effective:w/(c+2s) = 0.31
(7.5% absorption)

Floating Bridge		(kg/ m³)
Cement P30-4A/HS 65		410
Silica fume		33
Sand 0-5 mm		675
Liapor 8 4-8 mm		270
Liapor 8 4-16 mm		325
Scancem P	40%	2-3.5
Scancem SP-40	40%	6-7.5
Scancem L(T)	1:9	0.5-1.5
Scancem R-20	20%	0-0.3
Water (ex. Absorption)		150:
w/(c+2s) ≤		0.35 +/-0.02



BUILT:	1991-1994
OWNER/CLIENT:	**The Public Roads Administration, Hordaland**
CONSULTANTS:	Dr. ing Aas-Jakobsen A/S / Instanes A/S / Søvik & Kloster A/S (+ Consulting Eng. A.R. Reinertsen, for the floating bridge)
CONTRACTORS:	Selmer A.S (high bridge) / AF Salhus Flytebru (JV: Kvaerner Eureka a.s, Norwegian Contractors a.s and A/S Veidekke).
ARCHITECTS:	Lund & Slaatto, Lund & Løvseth, Hindhammar Sundt - Thomassen

Nordhordland bridge consists of a high cable stayed bridge and a floating bridge

HIGH BRIDGE: Single tower reaching 98 m above sea level. The main span (163 m) in LWC, ND-concrete grade C45 in rest of structure.

FLOATING BRIDGE: A continuous 1246 m high grade steel box girder supported by 10 pontoons (42x20.5x7.2-8.9 m) made of LWA-concrete The pontoons were built in a dock near Fredrikstad.

CONCRETE VOLUME:

High bridge:	LC55: 1150 m3 <1900 kg/m3.
Floating bridge:	LC55: 8.500 m3 1950 +0/-50 kg/m3
Shore attachments:	10.400 m3 ND

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