



**Fjaðurstuðull steinsteypu
Lokaverkefni í byggingartæknifræði**

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Leiðbeinendur

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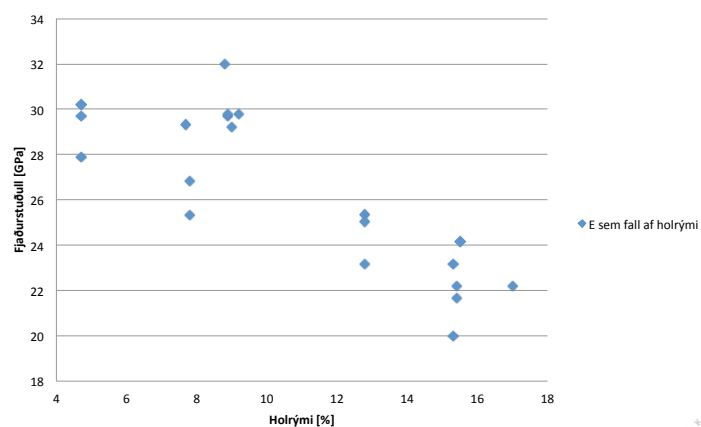
Steypusýni

Sýni	Steypustýrkur	Rúmpyngd [kg/m ³]	v/s - tala	Loftinnihald [%]	Sandur [kg/m ³]	Möl [kg/m ³]	Holrými [%]	Þrýstistýrkur [MPa]	Mældur fjaðurstuðull [GPa]
1.1	C30	2.369	0.39	6.2	1319.8	544	17	54.4	22.2
1.6	C30	2.342	0.48	7.5	1311.1	488	15.4	43.4	21.6
1.3	C30	2.401	0.42	5.0	1306	541	15.5	55.7	24.2
1.9	C25	2.324	0.52	6.8	1292.2	522	15.3	41.9	20.0
1.13	C35	2.356	0.40	6.2	1061	598	15.3	60.5	23.2
1.15	C35	2.291	0.41	8.3	1174.8	485	15.4	50	22.2
3.2	C30	2.337	0.43	8.7	1000	840	8.9	36.3	29.7
3.5	C25	2.331	0.55	6.0	1040	810	9	29.6	29.2
3.7	C35	2.347	0.41	7.7	860	910	8.9	35.6	29.8
3.19	C45	2.415	0.36	3.5	1180	670	8.8	52.9	32.0
3.22	C30	2.423	0.52	5.1	1090	820	9.2	29.8	29.8
4.4	C30	2.317	0.40	7.0	1214	577	12.8	50.5	25.3
4.8	C35	2.300	0.42	9.0	1186	563	12.8	55.5	25.0
4.11	C25	2.296	0.50	7.0	1186	563	12.8	41.9	23.2
5.10	C25	2.418	0.51	6.2	1205	767.00	7.8	32.3	25.3
5.20	C30	2.398	0.50	8.0	1167	769.00	7.8	35.3	26.8
5.26	C35	2.447	0.51	5.9	1076	837.00	7.7	45.4	29.3
13.39	C30	2.409	0.49	6.8	913	975	4.7	38.9	27.9
13.40	C30	2.402	0.49	6.6	923	987.00	4.7	46.9	30.2
13.41	C30	2.465	0.49	4.4	942	1007	4.7	42.9	29.7



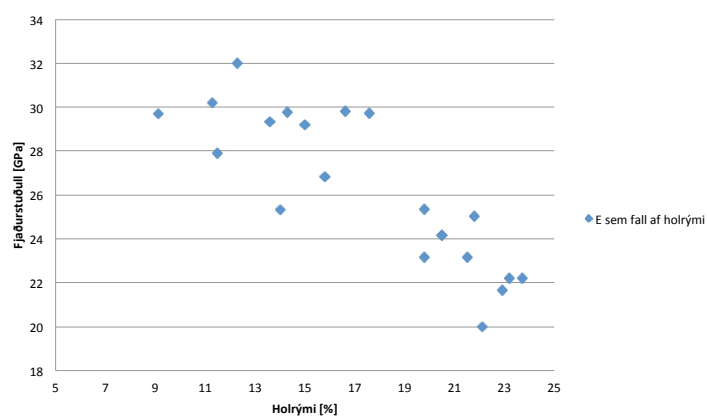
Fall af holrými fylliefna

E sem fall af holrými fylliefna



Fall af heildar holrými

E sem fall af heildar holrými



Eurocode

Sýni nr.	E_c m	E_{melt}	Lækkunar- stuðull	Þétt fylliefni (0.9)	Hlutfall	Opin fylliefni (0.6)	Hlutfall
1	32.84	22.21	0.68	29.55	ekki ok	19.70	ok
	32.84	21.64	0.66	29.55	ekki ok	19.70	ok
	32.84	24.18	0.74	29.55	ekki ok	19.70	ok
	31.48	19.99	0.64	28.33	ekki ok	18.89	ok
	34.08	23.15	0.68	30.67	ekki ok	20.45	ok
	34.08	22.20	0.65	30.67	ekki ok	20.45	ok
3	32.84	29.71	0.90	29.55	ok	19.70	ok
	31.48	29.23	0.93	28.33	ok	18.89	ok
	34.08	29.79	0.87	30.67	ekki ok	20.45	ok
	36.28	31.98	0.88	32.65	ekki ok	21.77	ok
32.84	29.77	0.91	29.55	ok	19.70	ok	
4	32.84	25.35	0.77	29.55	ekki ok	19.70	ok
	34.08	25.04	0.73	30.67	ekki ok	20.45	ok
	31.48	23.18	0.74	28.33	ekki ok	18.89	ok
5	31.48	25.31	0.80	28.33	ekki ok	18.89	ok
	32.84	26.83	0.82	29.55	ekki ok	19.70	ok
	34.08	29.33	0.86	30.67	ekki ok	20.45	ok
13	32.84	27.90	0.85	29.55	ekki ok	19.70	ok
	32.84	30.20	0.92	29.55	ok	19.70	ok
	32.84	29.70	0.90	29.55	ok	19.70	ok

Mældur fjæðurstuðull borinn saman við fjæðurstuðul reiknaðan skv. Eurocode



fib Model Code

Sýni nr.	E_d	$E_{m\ddot{a}lt}$	Lækkunar- stuðull α_c	Kalksteinn (0.9)	Hlutfall	Sandsteinn (0.7)	Hlutfall
1	33.55	22.21	0.66	30.20	ekki ok	23.49	ekki ok
	33.55	21.64	0.64	30.20	ekki ok	23.49	ekki ok
	33.55	24.18	0.72	30.20	ekki ok	23.49	ok
	32.01	19.99	0.62	28.81	ekki ok	22.41	ekki ok
	34.96	23.15	0.66	31.47	ekki ok	24.47	ekki ok
	34.96	22.20	0.63	31.47	ekki ok	24.47	ekki ok
3	33.55	29.71	0.89	30.20	ekki ok	23.49	ok
	32.01	29.23	0.91	28.81	ok	22.41	ok
	34.96	29.79	0.85	31.47	ekki ok	24.47	ok
	37.49	31.98	0.85	33.74	ekki ok	26.24	ok
	33.55	29.77	0.89	30.20	ekki ok	23.49	ok
4	33.55	25.35	0.76	30.20	ekki ok	23.49	ok
	34.96	25.04	0.72	31.47	ekki ok	24.47	ok
	32.01	23.18	0.72	28.81	ekki ok	22.41	ok
5	32.01	25.31	0.79	28.81	ekki ok	22.41	ok
	33.55	26.83	0.80	30.20	ekki ok	23.49	ok
	34.96	29.33	0.84	31.47	ekki ok	24.47	ok
13	33.55	27.90	0.83	30.20	ekki ok	23.49	ok
	33.55	30.20	0.90	30.20	ok	23.49	ok
	33.55	29.70	0.89	30.20	ekki ok	23.49	ok

Mældur fjaðurstuðull borinn saman við fjaðurstuðul reiknaðan skv. fib Model Code



Tillögur að lægri stuðlum

Nýjar tillögur byggðar á rannsókn Mannvits 2013

Lækkunarstuðlar í þjóðarviðauka:

0,8 fyrir þétt fylliefni í stað 0,9
0,6 fyrir opin fylliefni

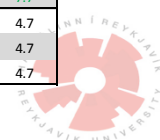
Lækkunarstuðlar í Model Code:

0,8 fyrir þétt íslenskt basalt
0,6 fyrir opið íslenskt basalt



Tillögur að lægri stuðlum, EC

Sýni nr.	E_{cm}	$E_{mælt}$	Lækkunar- stuðull	Þétt (0.8)	Hlutfall	Opin (0.6)	Hlutfall	Holrými
1	32.84	22.21	0.68	26.27	ekki ok	19.70	ok	17
	32.84	21.64	0.66	26.27	ekki ok	19.70	ok	15.4
	32.84	24.18	0.74	26.27	ekki ok	19.70	ok	15.5
	31.48	19.99	0.64	25.18	ekki ok	18.89	ok	15.3
	34.08	23.15	0.68	27.26	ekki ok	20.45	ok	15.3
	34.08	22.20	0.65	27.26	ekki ok	20.45	ok	15.4
3	32.84	29.71	0.90	26.27	ok	19.70	ok	8.9
	31.48	29.23	0.93	25.18	ok	18.89	ok	9
	34.08	29.79	0.87	27.26	ok	20.45	ok	8.9
	36.28	31.98	0.88	29.03	ok	21.77	ok	8.8
	32.84	29.77	0.91	26.27	ok	19.70	ok	9.2
4	32.84	25.35	0.77	26.27	ekki ok	19.70	ok	12.8
	34.08	25.04	0.73	27.26	ekki ok	20.45	ok	12.8
	31.48	23.18	0.74	25.18	ekki ok	18.89	ok	12.8
5	31.476	25.31	0.80	25.18	ok	18.89	ok	7.8
	32.837	26.83	0.82	26.27	ok	19.70	ok	7.8
	34.077	29.33	0.86	27.26	ok	20.45	ok	7.7
13	32.84	27.90	0.85	26.27	ok	19.70	ok	4.7
	32.84	30.20	0.92	26.27	ok	19.70	ok	4.7
	32.84	29.70	0.90	26.27	ok	19.70	ok	4.7



Tillögur að lægri stuðlum, fib MC

Sýni nr.	E_{ci}	$E_{mælt}$	Lækkunar- stuðull α_E	Íslenskt þétt basalt (0.8)	Hlutfall	Íslenskt opið basalt (0.6)	Hlutfall	Holrými
1	33.55	22.21	0.66	26.84	ekki ok	20.13	ok	17
	33.55	21.64	0.64	26.84	ekki ok	20.13	ok	15.4
	33.55	24.18	0.72	26.84	ekki ok	20.13	ok	15.5
	32.01	19.99	0.62	25.61	ekki ok	19.21	ok	15.3
	34.96	23.15	0.66	27.97	ekki ok	20.98	ok	15.3
	34.96	22.20	0.63	27.97	ekki ok	20.98	ok	15.4
3	33.55	29.71	0.89	26.84	ok	20.13	ok	8.9
	32.01	29.23	0.91	25.61	ok	19.21	ok	9
	34.96	29.79	0.85	27.97	ok	20.98	ok	8.9
	37.49	31.98	0.85	29.99	ok	22.49	ok	8.8
	33.55	29.77	0.89	26.84	ok	20.13	ok	9.2
4	33.55	25.35	0.76	26.84	ekki ok	20.13	ok	12.8
	34.96	25.04	0.72	27.97	ekki ok	20.98	ok	12.8
	32.01	23.18	0.72	25.61	ekki ok	19.21	ok	12.8
5	32.01	25.31	0.79	25.61	ekki ok	19.21	ok	7.8
	33.55	26.83	0.80	26.84	ekki ok	20.13	ok	7.8
	34.96	29.33	0.84	27.97	ok	20.98	ok	7.7
13	33.55	27.90	0.83	26.84	ok	20.13	ok	4.7
	33.55	30.20	0.90	26.84	ok	20.13	ok	4.7
	33.55	29.70	0.89	26.84	ok	20.13	ok	4.7

