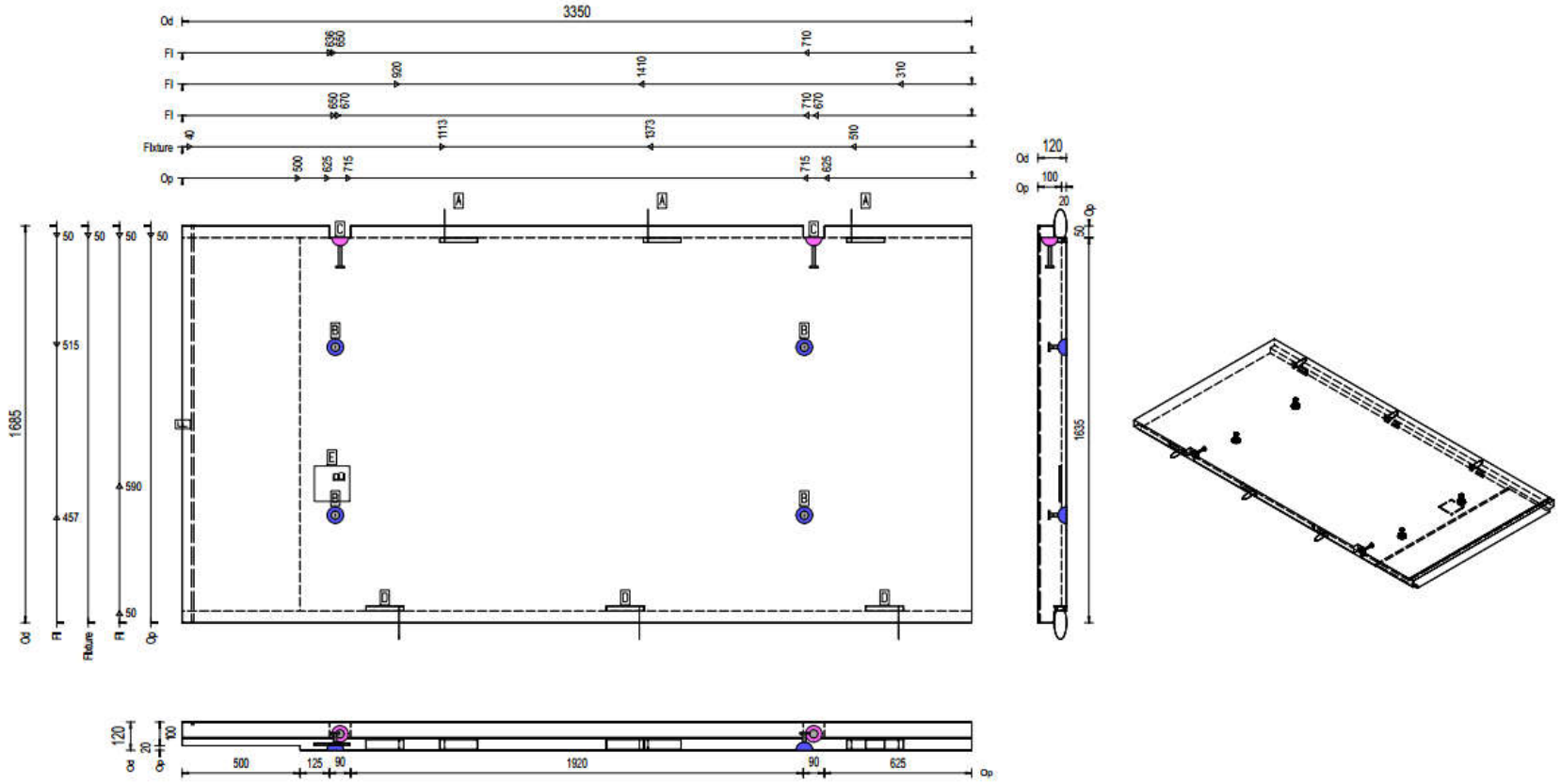


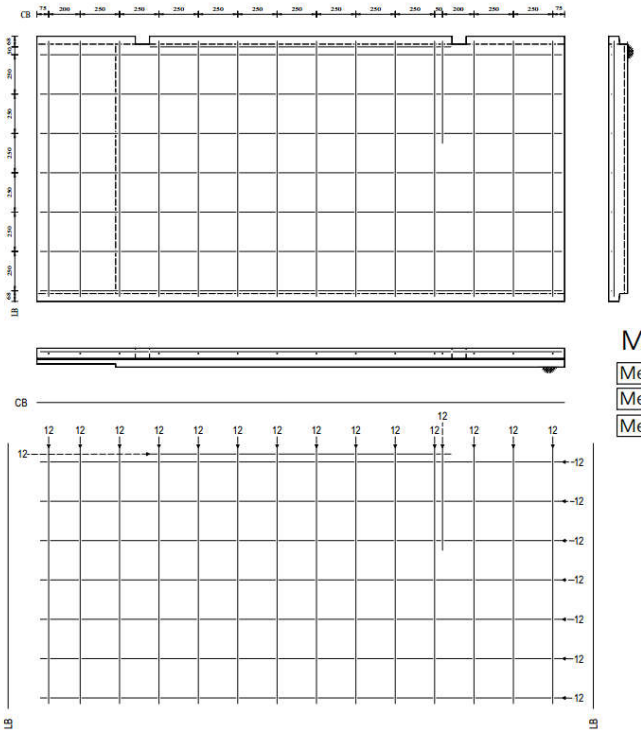
Mesh 2 Layer : บางส่วน

Mesh บนห่างจากผิวบน 20 mm

Mesh ล่าง (บางส่วน) ห่างจากผิวล่าง 40 mm

Mesh SC204 - #12@250 - 1.650x1.685 m. (21.60 Kg)

Rev.No.	Descrip
1	Add Gr

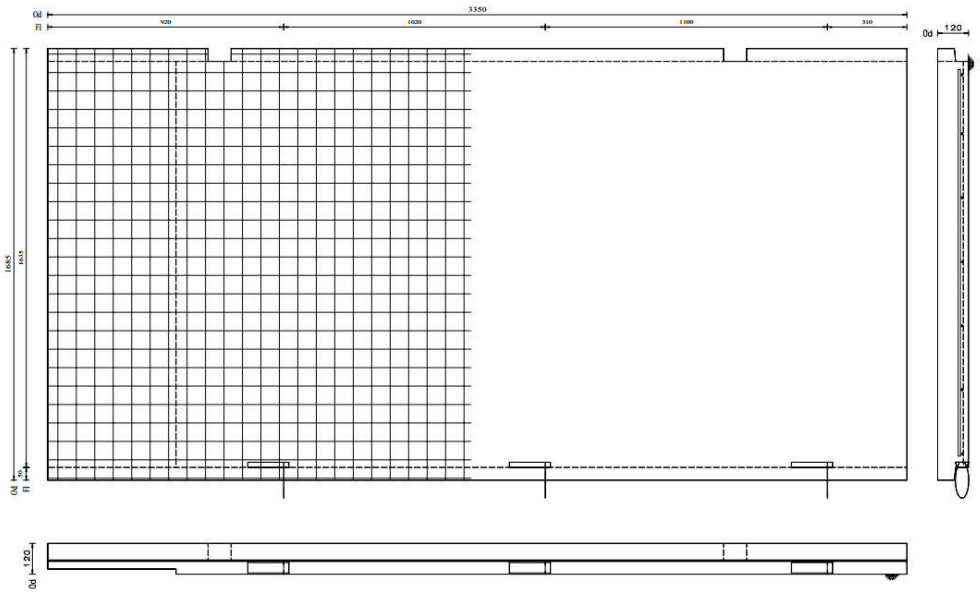


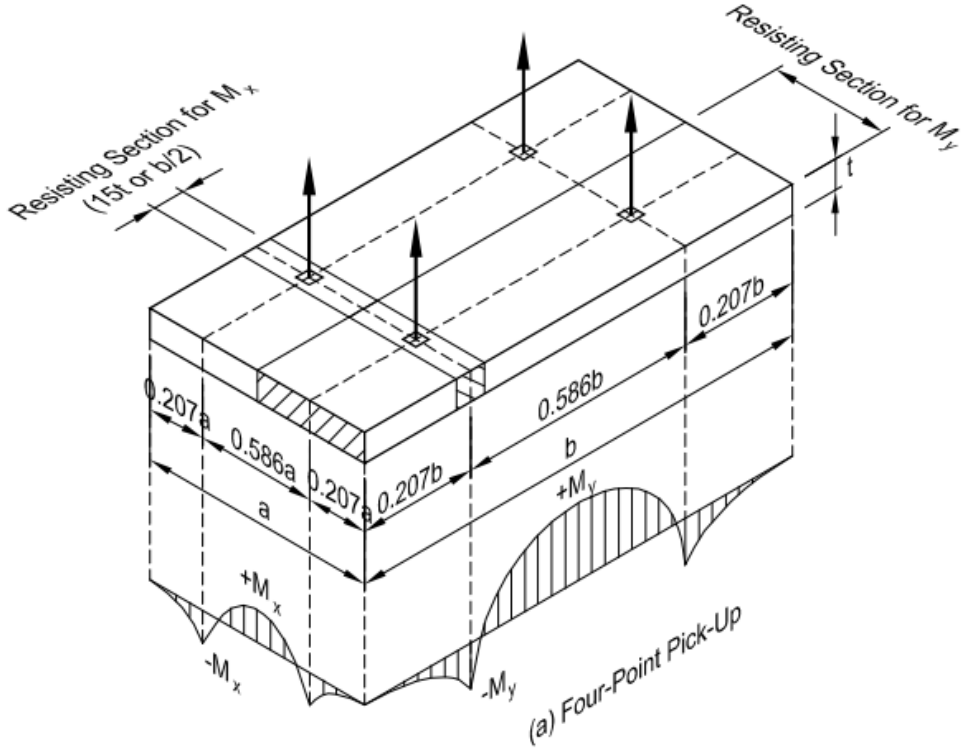
Mesh 2 Laye

Mesh บนห่างจากผิ

Mesh ล่าง (บางส่วน

Mesh SC204 - #12





(a) Four-Point Pick-Up
Maximum Moments

w = weight per unit area

Locations Shown for Equal Pick Loads:

$+M_x = -M_x = 0.0107wa^2b$

$+M_y = -M_y = 0.0107wab^2$

M_x resisted by a section of width 15t or b/2, whichever is less

M_y resisted by a section of width a/2

Concrete			C28/35
Concrete at lifting			C20/25
Steel Grade (Mpa)			39
Tilting			
DL			
Self	0.1	240	kg/m2
Drafting	1000N/m2	100	kg/m2
Factor Load		578	kg/m2
t		0.12	m
Span		1.685	m
Max Moment		205.13	kg.m
Consider width 6t		0.72	m
		2.79	kN.m/m
Reinforce	C20/25 + 4D 20g + dia 6@250		
	(put as bottom 4mm covering)		
Moment capacity		5.1	kN.m/m
			OK

Moment Capacity — **beam type section**

design approach	DAfStb Technical rule on Steel Fibre Concrete
safety factors	Structural Applications, Ultimate Limit State
reinforcement layout	Combined

Geometry: beam type section

h	120	[mm]
b_1	1000	[mm]

Fiber Concrete

concrete class	C20/25		
residual strength $f_{R1,m}$	2.47	[N/mm²]	(according to EN 14651)
residual strength $f_{R4,m}$	2.62	[N/mm²]	(according to EN 14651)

Steel Fibers

Dramix® fiber type	Dramix 4D 65/60BG	(EN 14889-1: System '1' - Structural Use)
recommended dosage	20 kg/m³	(recommended dosage for testing according to EN 14561)

Reinforcement

yield strength f_{yk} 390 [N/mm²]

Reinforcement A_{s1}	(bottom)		**Reinforcement A_{s2}**	n/a	
bar diameter d_s	6	[mm]	bar diameter d_s	-	[mm]
number of bars	4	[-]	number of bars	-	[-]
rebar cross section	113	[mm²]	rebar cross section	-	[mm²]
concrete cover c_{nom}	40	[mm]	concrete cover c_{nom}	-	[mm]

Bending Moment Capacity

M_{Rd}	**5.11**	**[kNm]**
N	0.0	[kN]

(compression force: negative sign)

Calculated moment direction: positive moment capacity

Data Base 1.1.6
Moment Capacity 3.2.1

Lifting

DL			
Self	0.1	240	kg/m2
Factor Load		408	kg/m2
a		1.685	m
b		3.35	m
t		0.12	m
Mx		41.52	kg.m
15t		1.80	m
b/2		1.68	m
Mx to calculate		24.79	kg.m/m
My		82.55	kg.m
My to calculate		97.99	kg.m/m
	Max moment	0.96	kN.m/m
Reinforce	C28/35 + 4D 20g + dia 6@250		
	(put as top reinforcement for safety precaustion)		
Moment capacity		4.3	kN.m/m
		OK	

Moment Capacity — **beam type section**

design approach	DAfStb Technical rule on Steel Fibre Concrete
safety factors	Structural Applications, Ultimate Limit State
reinforcement layout	Combined

Geometry: beam type section

h	120	[mm]	
b_1	1000	[mm]	

Fiber Concrete

concrete class	C28/35		
residual strength $f_{R1,m}$	2.62	[N/mm²]	(according to EN 14651)
residual strength $f_{R4,m}$	3.10	[N/mm²]	(according to EN 14651)

Steel Fibers

Dramix® fiber type	Dramix 4D 65/60BG	(EN 14889-1: System '1' - Structural Use)
recommended dosage	20 kg/m³	(recommended dosage for testing according to EN 14561)

Reinforcement

yield strength f_{yk} 390 [N/mm²]

Reinforcement A_{s1}	n/a		**Reinforcement A_{s2}**	(top)	
bar diameter d_s	-	[mm]	bar diameter d_s	6	[mm]
number of bars	-	[-]	number of bars	4	[-]
rebar cross section	-	[mm²]	rebar cross section	113	[mm²]
concrete cover c_{nom}	-	[mm]	concrete cover c_{nom}	40	[mm]

Bending Moment Capacity

M_{Rd}	**4.27**	**[kNm]**	
N	0.0	[kN]	(compression force: negative sign)

Calculated moment direction: positive moment capacity

Data Base 1.1.6
Moment Capacity 3.2.1

Cantilever Area

DL		
Self	0.1	240 kg/m2
Topping	0.05	117.5 kg/m2
LL		200 kg/m2
Factor Load		1007.75 kg/m2
Cantilever Span		0.5 m
Max Moment		125.97 kg.m/m
		1.24 kN.m/m
Reinforce	C28/35 + 4D 20g + dia 6@250	
Moment capacity		4.8 kN.m/m
		OK

Moment Capacity — **beam type section**

design approach	DAfStb Technical rule on Steel Fibre Concrete
safety factors	Structural Applications, Ultimate Limit State
reinforcement layout	Combined

Geometry: beam type section

h	100	[mm]
b_1	1000	[mm]

Fiber Concrete

concrete class	C28/35		
residual strength $f_{R1,m}$	2.62	[N/mm²]	(according to EN 14651)
residual strength $f_{R4,m}$	3.10	[N/mm²]	(according to EN 14651)

Steel Fibers

Dramix® fiber type	Dramix 4D 65/60BG	(EN 14889-1: System '1' - Structural Use)
recommended dosage	20 kg/m³	(recommended dosage for testing according to EN 14561)

Reinforcement

yield strength f_{yk} 390 [N/mm²]

Reinforcement A_{s1}	n/a		**Reinforcement A_{s2}**	(top)	
bar diameter d_s	-	[mm]	bar diameter d_s	6	[mm]
number of bars	-	[-]	number of bars	4	[-]
rebar cross section	-	[mm²]	rebar cross section	113	[mm²]
concrete cover c_{nom}	-	[mm]	concrete cover c_{nom}	20	[mm]

Bending Moment Capacity

M_{Rd}	**-4.78**	**[kNm]**	
N	0.0	[kN]	(compression force: negative sign)

Calculated moment direction: negative moment capacity

Data Base 1.1.6
Moment Capacity 3.2.1

Possitive Moment (as simple support)

DL		
Self	0.12	288 kg/m2
Topping	0.05	117.5 kg/m2
LL		200 kg/m2
Factor Load		1089.35 kg/m2
One-way Slab Span		1.66 m
Max Moment		375.23 kg.m/m
		3.68 kN.m/m
Reinforce	C28/35 + 4D 20g + dia 6@250	
	(put as top reinforcement for safety precaustion)	
Moment capacity		4.3 kN.m/m
		OK
Rebar original		70.69 kg
New rebar		10.43 kg
Reduce rebar		60.27 kg
Fiber 4D 65/60BG		13.55 kg

Moment Capacity — **beam type section**

design approach	DAfStb Technical rule on Steel Fibre Concrete
safety factors	Structural Applications, Ultimate Limit State
reinforcement layout	Combined

Geometry: beam type section

h	120	[mm]
b_1	1000	[mm]

Fiber Concrete

concrete class	C28/35		
residual strength $f_{R1,m}$	2.62	[N/mm²]	(according to EN 14651)
residual strength $f_{R4,m}$	3.10	[N/mm²]	(according to EN 14651)

Steel Fibers

Dramix® fiber type	Dramix 4D 65/60BG	(EN 14889-1: System '1' - Structural Use)
recommended dosage	20 kg/m³	(recommended dosage for testing according to EN 14561)

Reinforcement

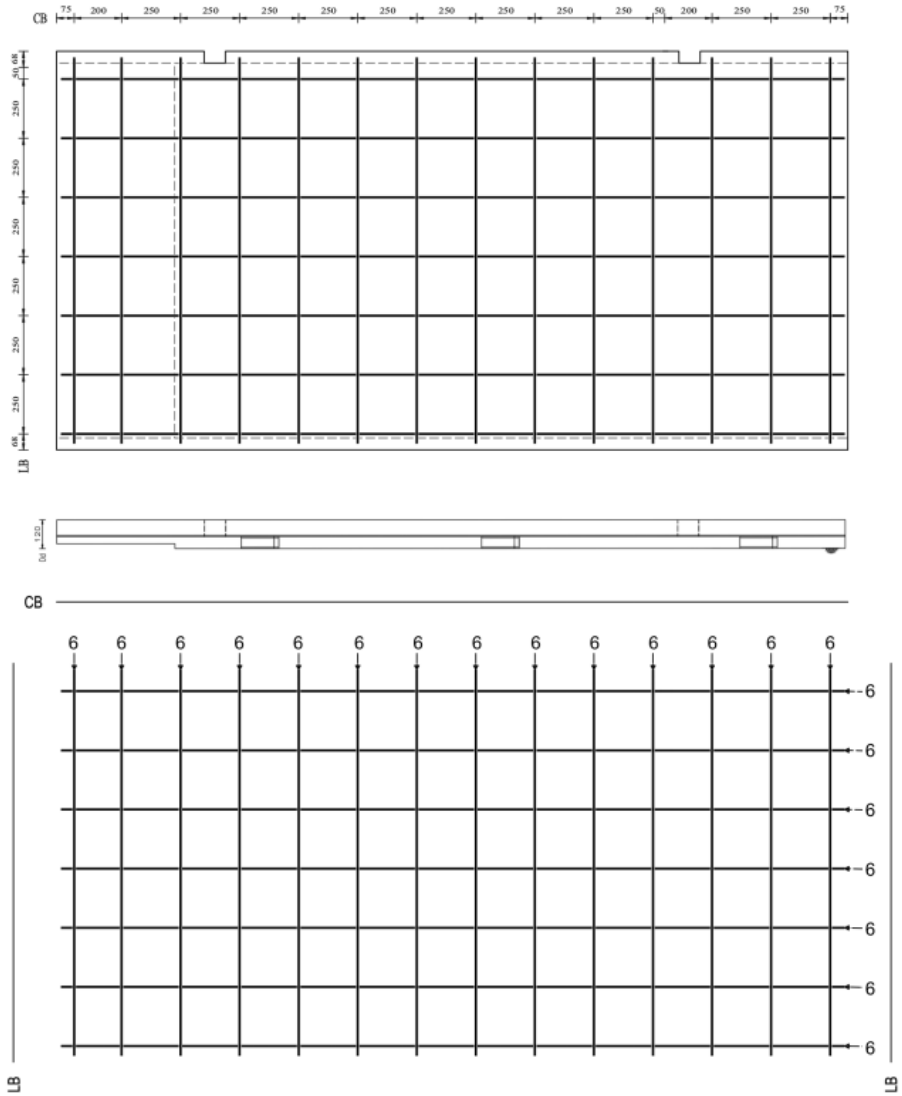
yield strength f_{yk}	390	[N/mm²]			
Reinforcement A_{s1}	n/a		**Reinforcement A_{s2}**	(top)	
bar diameter d_s	-	[mm]	bar diameter d_s	6	[mm]
number of bars	-	[-]	number of bars	4	[-]
rebar cross section	-	[mm²]	rebar cross section	113	[mm²]
concrete cover c_{nom}	-	[mm]	concrete cover c_{nom}	40	[mm]

Bending Moment Capacity

M_{Rd}	**4.32**	**[kNm]**
N	0.0	[kN] (compression force: negative sign)

Calculated moment direction: positive moment capacity

Data Base 1.1.6
Moment Capacity 3.2.1



Mesh ล่าง (บางส่วน) ห่างจากผิวล่าง 40 mm

Mesh SC204 - #6@250 - 1.650x1.685 m. (10.43Kg)

STEEL FIBER: 20kg of Dramix(R) 4D 65/60BG