RebarLite MESH™

One Dream. One Team. Numesh

NUMESH

The structural welded wire mesh the construction industry has been waiting for has arrived !

RebarLite Mesh™

Numesh designed a unique **engineered structural welded wire mesh with the capacity to replace 10M and 15M** rebar in structural slabs, slabs-on-grade, and more...

Build it...Faster
...Wiser
...Stronger
...Greener

Rebarlite Mesh™

"Empower your progress with Rebarlite Mesh™ where time-saving innovation meets lighter workloads: reduce risks of injury and environmental impacts while enhancing economic efficiency."

Rebarlite Mesh™ can be used in all structural applications, such as HIGH RISE BUILDING structural floor slabs, SLAB ON GRADE of commercial and industrial facilities, and more!

What is Rebarlite Mesh™?

It compliments or replaces typical 10M and 15M rebar with a structural welded wire mesh, D6.5 to D25.5 with 6x6, 8x8, and 12x12 wire spacings. The benefit easily justifies the conversion:

- Up to 27% less steel used
- Reduce risk of injury from repetitive movements
- Lower project carbon footprint
- Consistent bar spacing and welded bar intersections improves site approvals
- Accelerate execution on-site and improve productivity
- Reduce concrete shrinkage cracks
- Cost effective

RebarLite Mesh™ 15

STRUCTURAL MESH 6"x6"- D13/D13 - EQUIVALENT 15M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D13 = 83.9 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 15M @ 300 mm : 200 mm² x 1000 mm / 300 mm = 667 mm² per metre
667 mm² x 400 MPa / 500 MPa = 533 mm² per metre

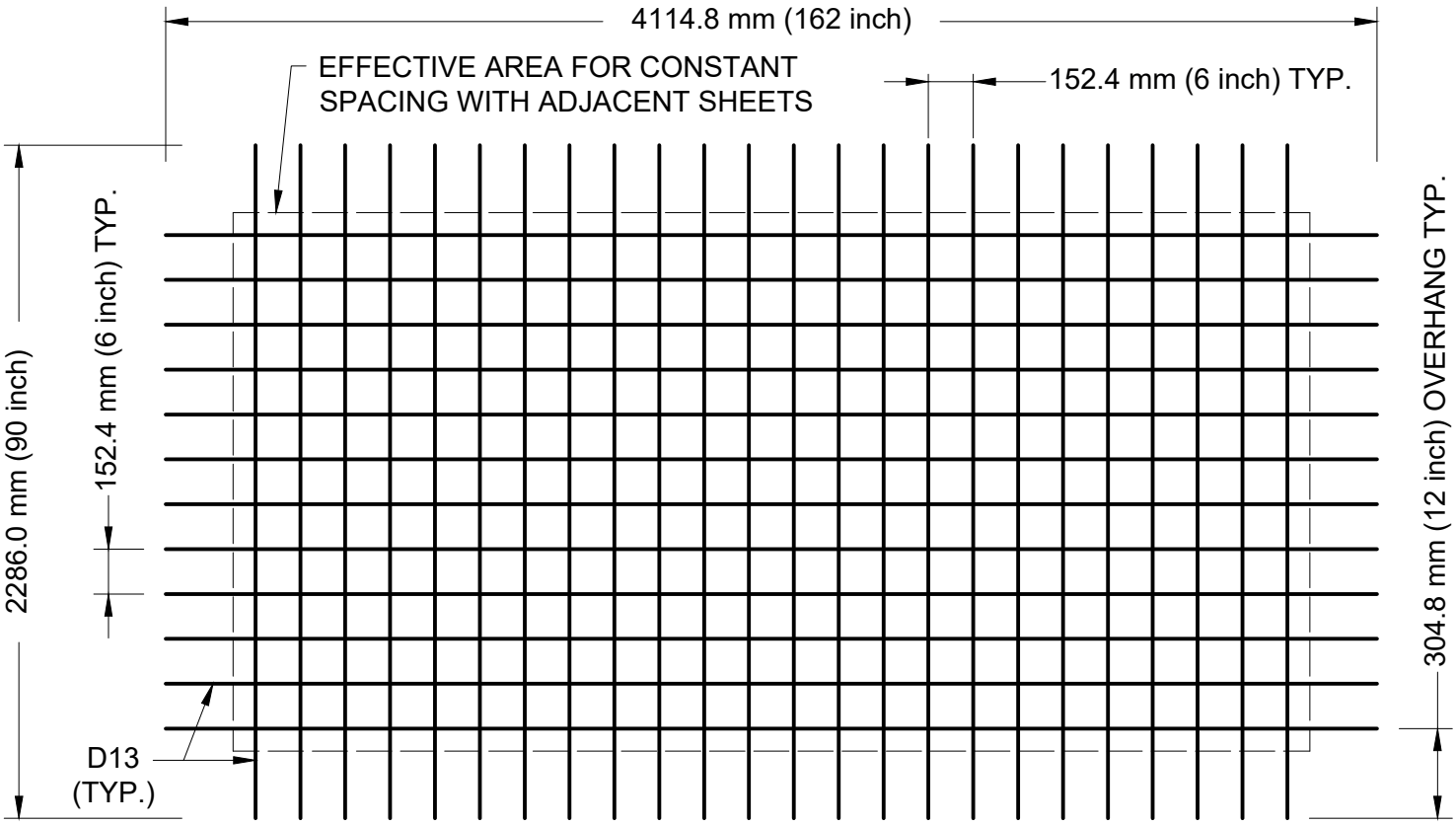
Area of D13 @ 6 inch: 83.9 mm² x 1000 mm / 152.4 mm = 550 mm² per metre

Area reduction = 100% - 550 mm²/ 667 mm²= 17.5%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

5.Total weight of sheet = 68.6 kg [151 lb]



RebarLite Mesh™ 15

STRUCTURAL MESH 8"x 8"- D17/D17 - EQUIVALENT 15M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D17 = 109.7 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 15M @ 300 mm : 200 mm² x 1000 mm / 300 mm = 667 mm² per metre
667 mm² x 400 MPa / 500 MPa = 533 mm² per metre

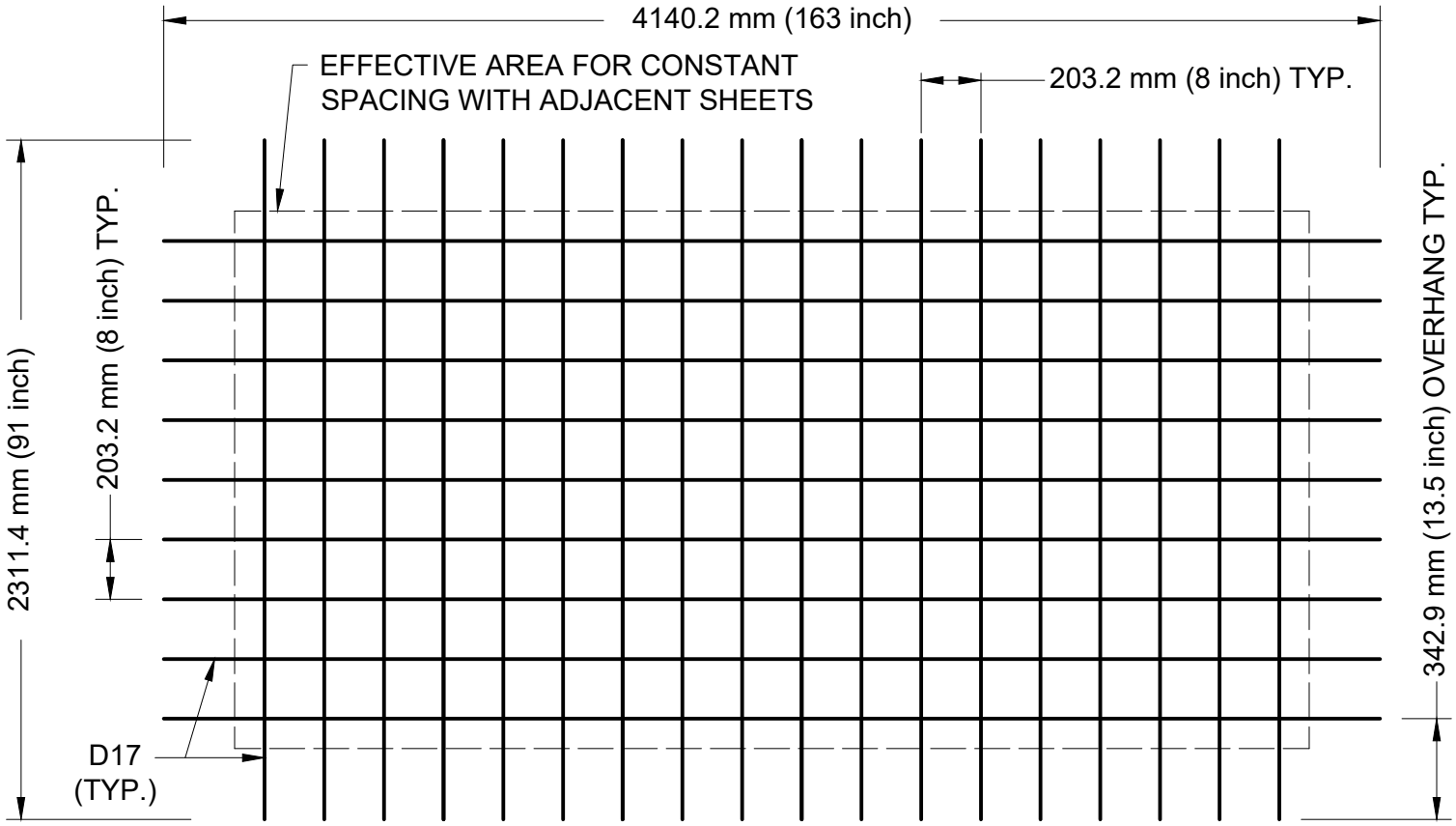
Area of D17 @ 8 inch: 109.7mm² x 1000 mm / 203.2 mm = 540 mm² per metre

Area reduction = 100% - 540 mm² / 667 mm² = 19.0%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

5. Total weight of sheet = 67.8 kg [150 lb]



RebarLiteMesh™ 15

STRUCTURAL MESH 12"x12"- D25.5/D25.5 - EQUIVALENT 15M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D25.5 = 164.5 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 15M @ 300 mm : 200 mm² x 1000 mm / 300 mm = 667 mm² per metre
667 mm² x 400 MPa / 500 MPa = 533 mm² per metre

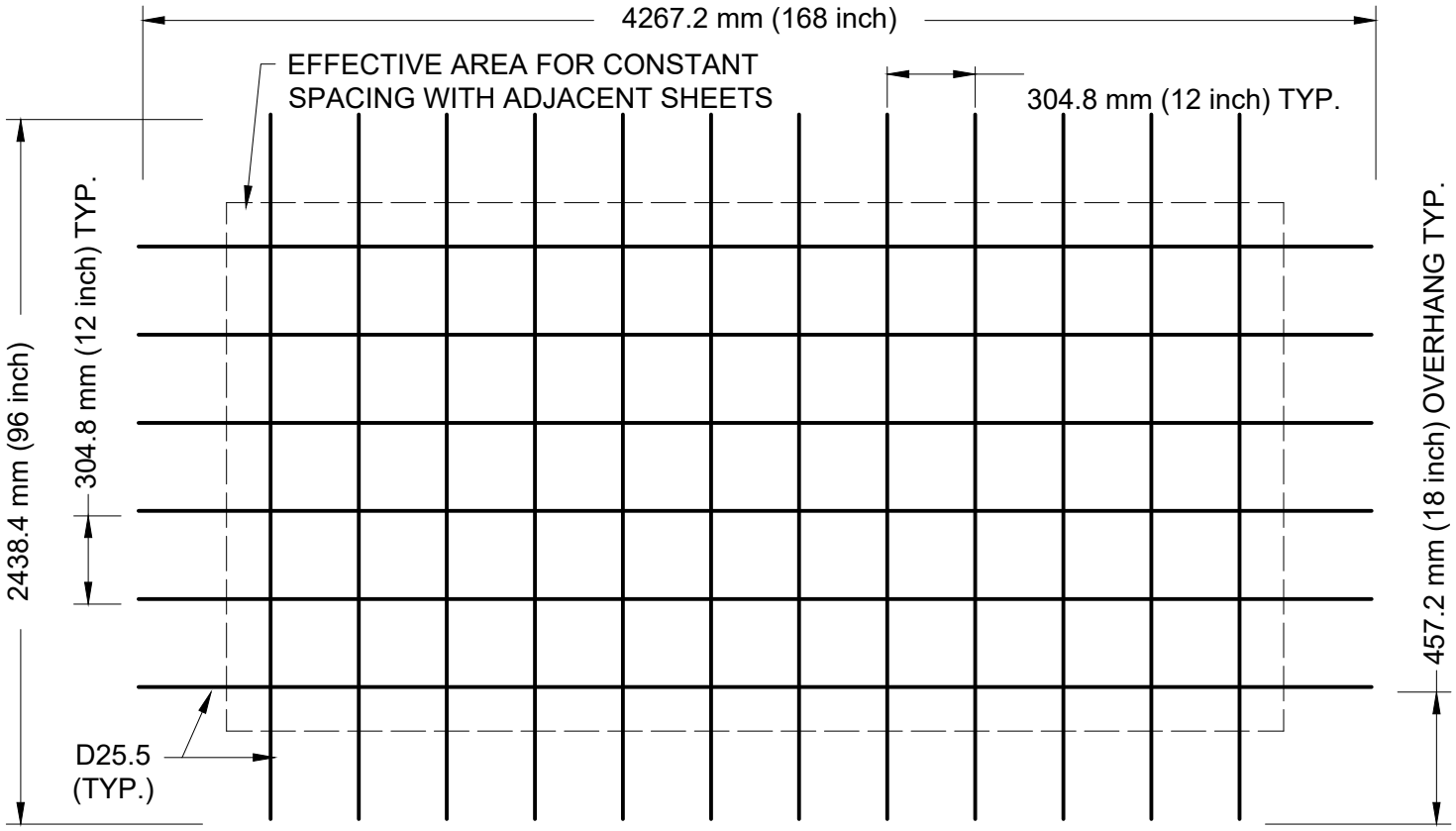
Area of D25.5 @ 12 inch: 164.5 mm² x 1000 mm / 304.8 mm = 540 mm² per metre

Area reduction = 100% - 540 mm² / 667 mm² = 19.0%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

5.Total weight of sheet = 70.8 kg [156 lb]



RebarLite Mesh™ 10

STRUCTURAL MESH 6"x 6"- D6.5/D6.5 - EQUIVALENT 10M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D6.5 = 41.9 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 10M @ 300 mm : 100 mm² x 1000 mm / 300 mm = 333 mm² per metre
333 mm² x 400 MPa / 500 MPa = 267 mm² per metre

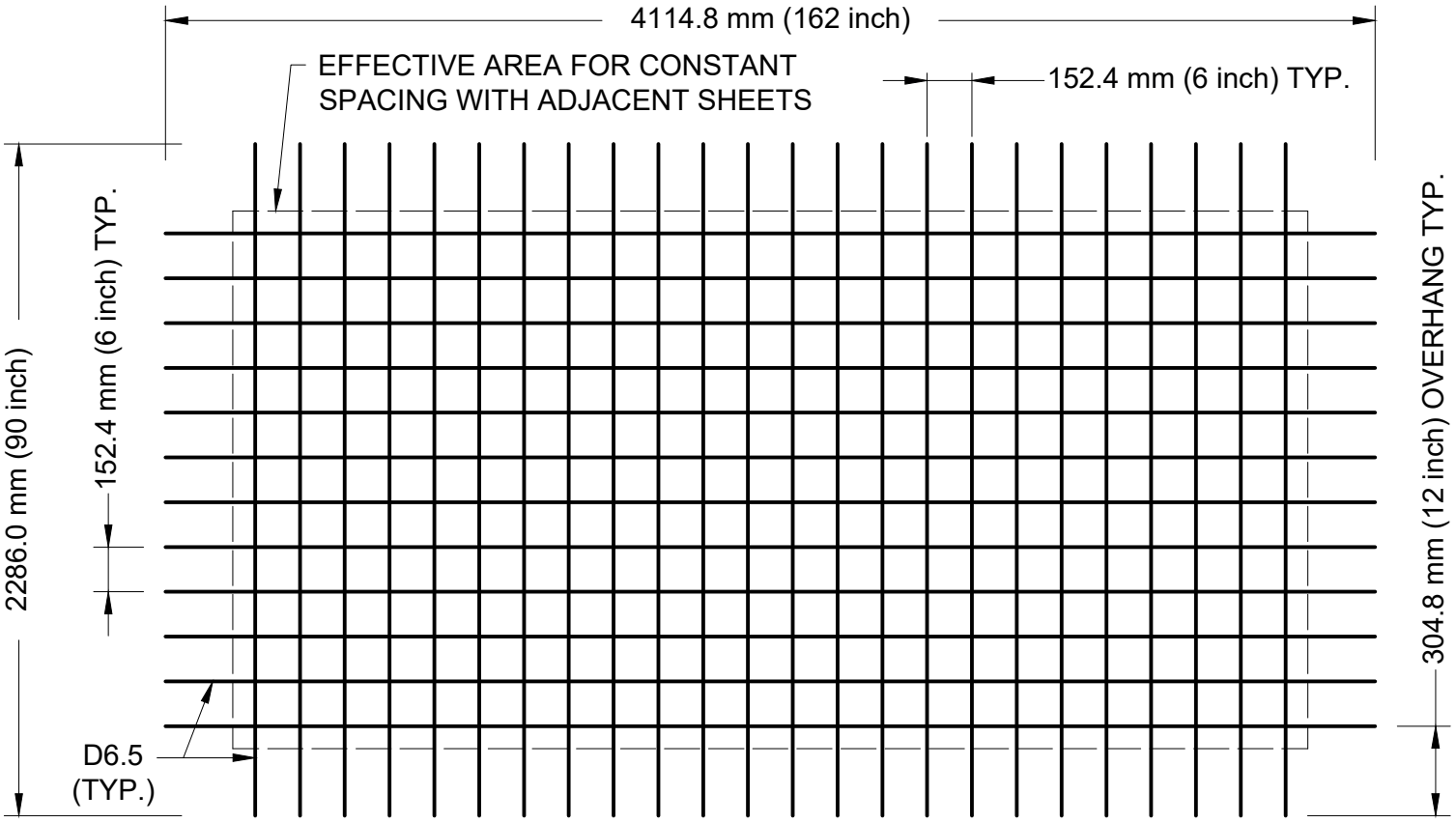
Area of D6.5 @ 6 inch: 41.9 mm² x 1000 mm / 152.4 mm = 275 mm² per metre

Area reduction = 100% - 275 mm² / 333 mm² = 17.4%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

5.Total weight of sheet = 34.3 kg [76 lb]



RebarLite Mesh™ 10

STRUCTURAL MESH 8"x 8"- D8.5/D8.5 - EQUIVALENT 10M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D8.5 = 54.8 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 10M @ 300 mm : 100 mm² x 1000 mm / 300 mm = 333 mm² per metre
333 mm² x 400 MPa / 500 MPa = 267 mm² per metre

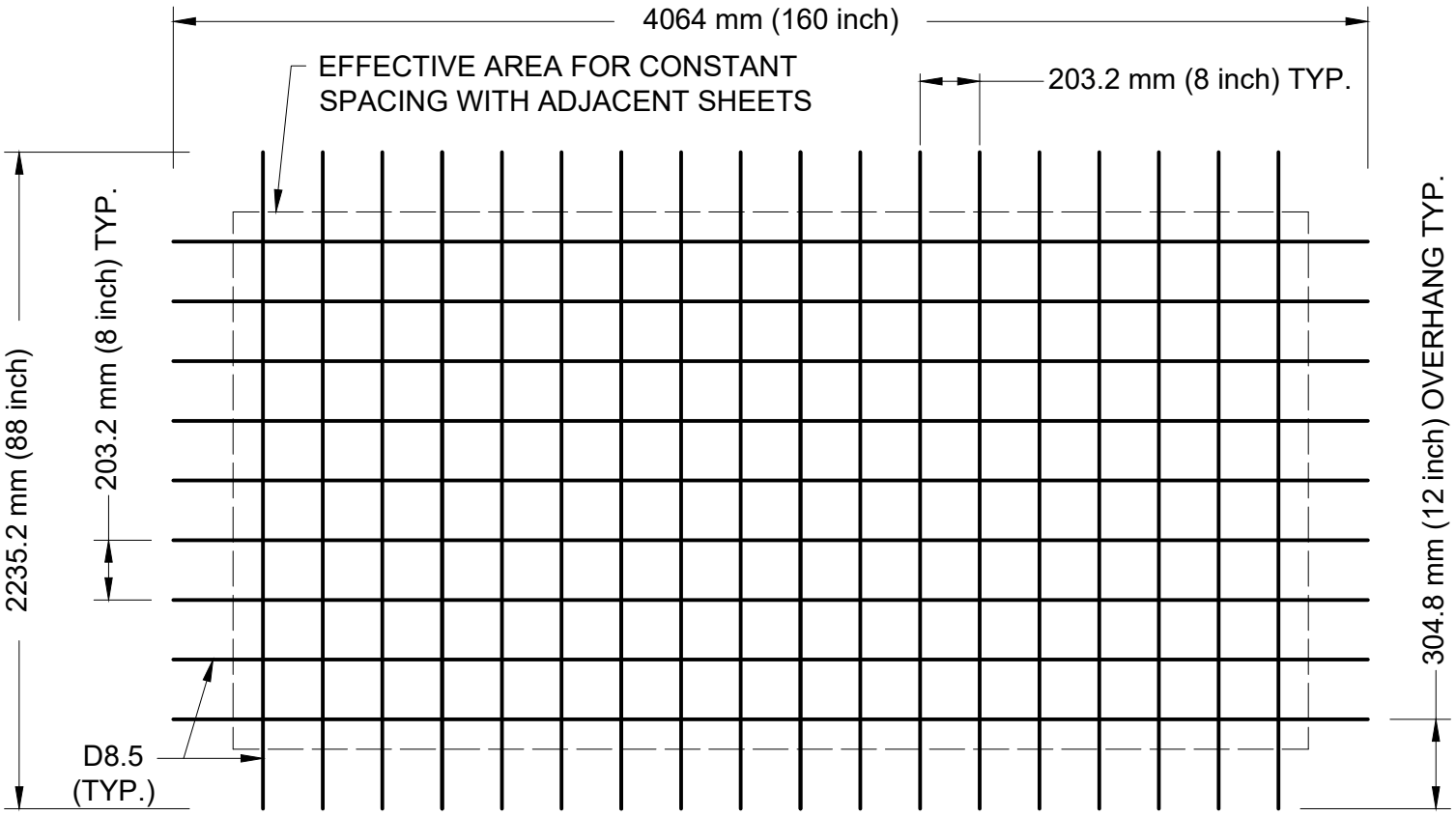
Area of D8.5 @ 8 inch: 54.8 mm² x 1000 mm / 203.2 mm = 270 mm² per metre

Area reduction = 100% - 270 mm²/ 333 mm²= 18.9%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

5.Total weight of sheet = 33.0 kg [73 lb]



RebarLite Mesh™ 10

STRUCTURAL MESH 12"x12"- D13/D13 - EQUIVALENT 10M at 300 mm

TECHNICAL INFORMATION:

1.Welded Wire Yield Strength = 500 MPa (CSA A23.3-19 - Cl. 8.5.1)

2.Wire Cross-Sectional Area, D13 = 83.9 mm²

3.Grade 400 Rebar Conversion Calculation

Moment resistance and Compression block:

$$M_r = \phi_s \cdot A_s \cdot f_y \cdot \left(d_s - \frac{a}{2}\right) \qquad a = \frac{\phi_s \cdot A_s \cdot f_y}{\alpha_1 \cdot \phi_c \cdot f'_c \cdot b}$$

The yield strength and steel area are proportionally related. Therefore, an increase in the yield strength is proportionally related to a decrease in the steel area for an equal moment resistance.

Equivalent Area for 10M @ 300 mm : 100 mm² x 1000 mm / 300 mm = 333 mm² per metre
333 mm² x 400 MPa / 500 MPa = 267 mm² per metre

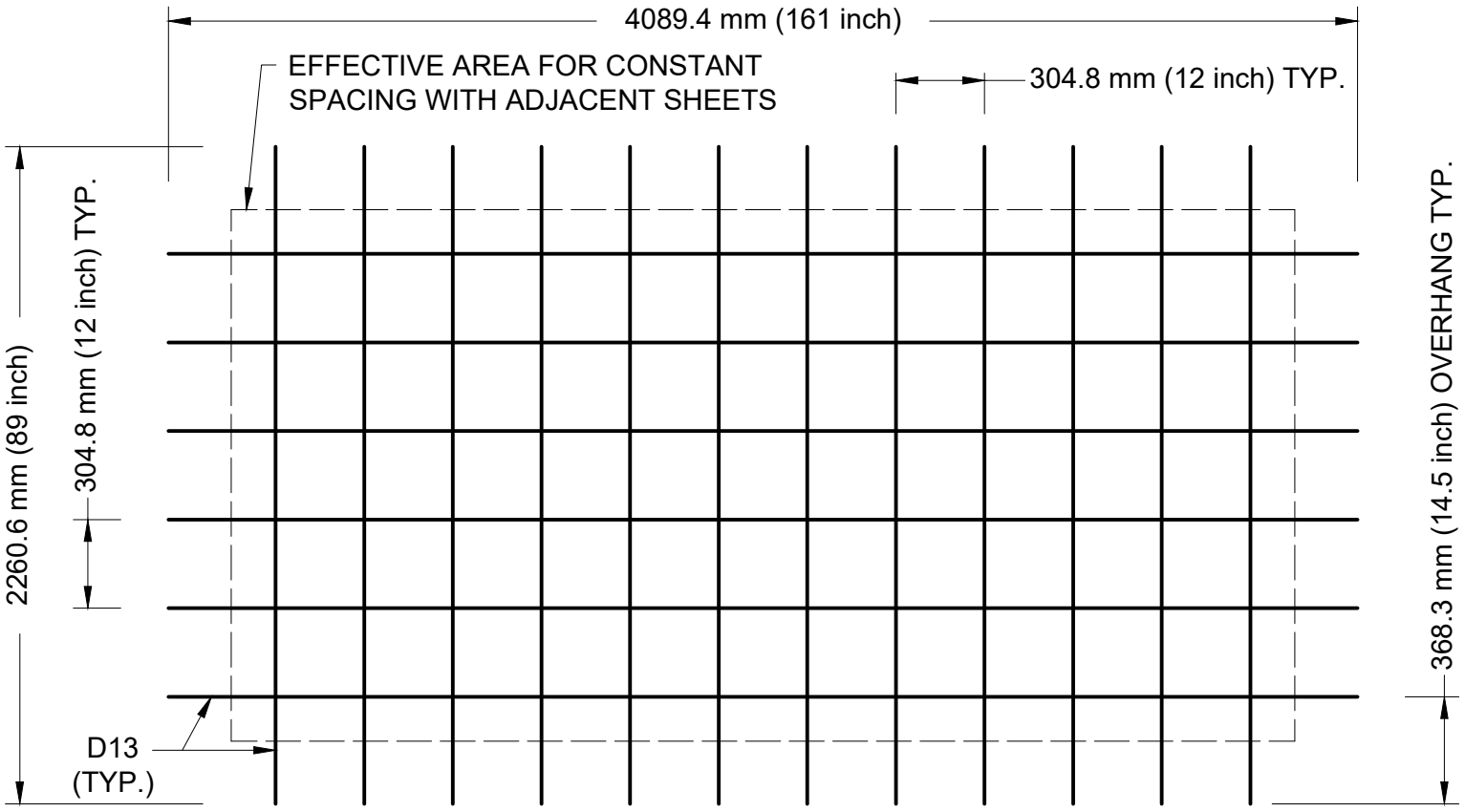
Area of D13 @ 12 inch: 83.9 mm² x 1000 mm / 304.8 mm = 275 mm² per metre

Area reduction = 100% - 275 mm² / 333 mm² = 17.4%

Rebar replacement and steel area reduction to be verified and approved by design engineer.

4.Effective coverage area = 1.83 m x 3.66 m [6.0 ft x 12.0 ft] = 6.69 m² [72.0 ft²]

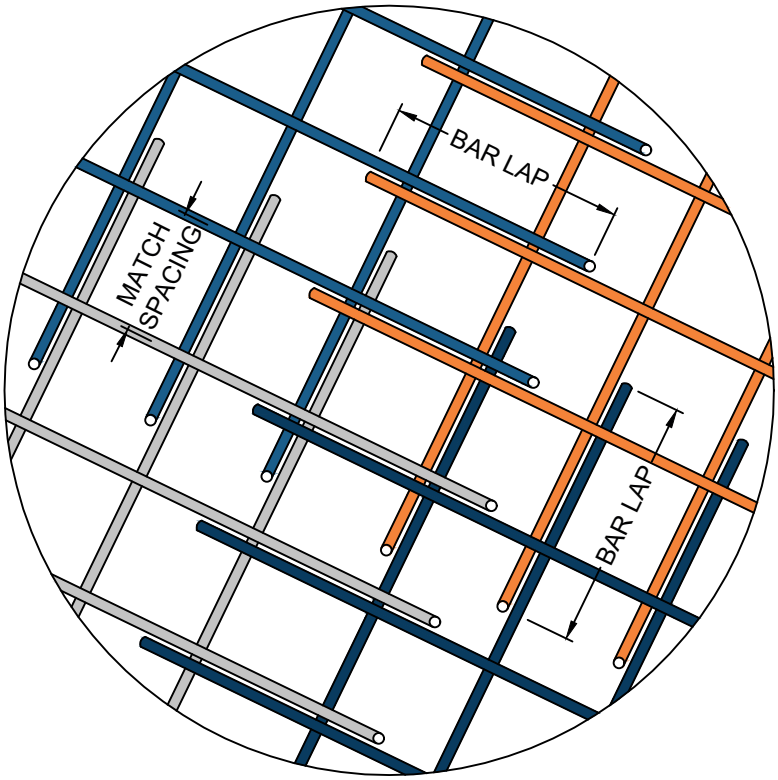
5.Total weight of sheet = 34.0 kg [75 lb]



RebarLite Mesh™ Development length

Minimum development length and Class B lap splice per CSA A23.3 - 19.
For typical concrete slabs, use the simplified development length in clause 12.2.3 and Table 12.1:

$$l_d = 0.45 \cdot k_1 \cdot k_2 \cdot k_3 \cdot k_4 \cdot \frac{f_y}{\sqrt{f'_c}} \cdot d_b$$



Mesh intersection bar lap detail

Table 1 Development length and Class B lap splice of RebarLite Mesh™

Mesh Type	Wire Diameter (mm)	Simplified Development Length (mm)	Class B Lap Splice (mm)	Overhang Provided		Lap Splice Provided	
				mm	inch	mm	inch
RebarLite Mesh™ 15							
6"x6" - D13/D13	10.3	320	420	304.8	12	457.2	18
8"x8" - D17/D17	11.8	360	470	342.9	13.5	482.6	19
12"x12" - D25.5/D25.5	14.5	450	590	457.2	18	609.6	24
RebarLite Mesh™ 10							
6"x6" - D6.5/D6.5	7.3	300	390	304.8	12	457.2	18
8"x8" - D8.5/D8.5	8.4	300	390	304.8	12	406.4	16
12"x12" - D13/D13	10.3	320	420	368.3	14.5	431.8	17

- Simplified development length is for concrete strength, f'_c, of 35 MPa or greater and steel yield strength, f_y, of 500 MPa
- Modification factors (k_1, k_2, k_3, and k_4) as per Clause 12.2.3 (CSA A23.3-19) for normal bar location, typical uncoated reinforcement, normal density concrete, and bar size smaller than 20M
- Class B lap splice as per Clause 12.15 (CSA A23.3-19)
- Lap splice provided = 2 x overhang – centre-to-centre spacing

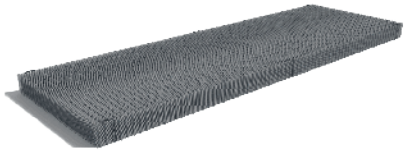
Reach out to us for alternative solutions and to explore our complete range of products.

We are committed to delivering high-quality products to meet valued clients' needs and the range of industries we are proud to serve.

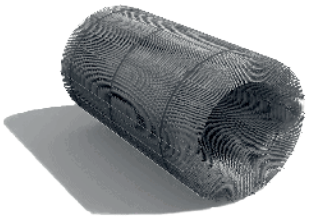
Construction Mesh

Efficient , industry-tailored wire mesh solutions that save on labor costs and time, while enhancing stress transfer, minimizing crack widths, and delivering cleaner finished surfaces.

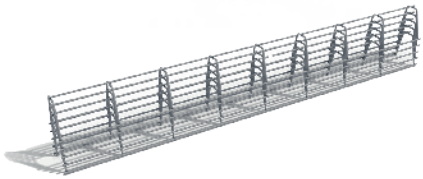
Construction mesh



Straight & cut wire

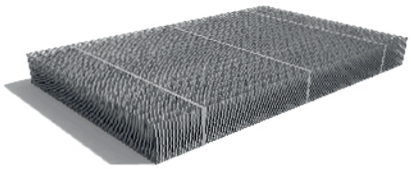


Pipe and manhole mesh



Continuous high chairs

Mining mesh



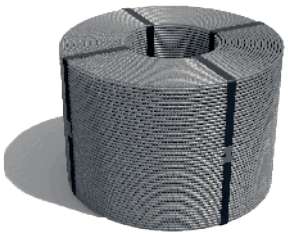
Mining

Our mine mesh ensures miner safety with superior rigidity, easy installation, and compatibility with shotcrete for effective application.

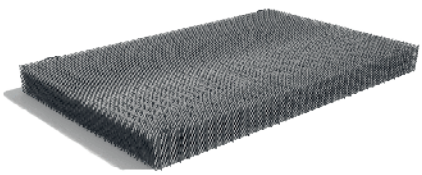
Infrastructure - Engineered Welded Wire

Our industry experts specialize in structural concrete reinforcement, offering efficient project delivery for various needs, including suspended slabs, slabs-on-grade, footings, tunnels, bridges and culverts.

Coils for cage-welding machines



Engineered welded wire



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