

Reinforcing Mesh Product Guide

Super Ductile 500E
and Hard Drawn
North Island

Mesh

Fletcher Reinforcing supplies the reinforcing steel and mesh that provides the strength to New Zealand's buildings and infrastructure.

Mesh is available from national Building Merchants or our branch network to construction sites and builders throughout New Zealand.

Fletcher Reinforcing offer a range of New Zealand manufactured mesh. The range covers both Super Ductile mesh in grade 500E wire and a proven range of hard drawn mesh in the sizes required by builders and contractors throughout New Zealand.



Super Ductile 500E

**SUPER
DUCTILE 500E™**

The Ministry of Building, Innovation & Employment (MBIE) requires that reinforcing for concrete slabs-on-ground buildings built in accordance with NZS 3604, have a minimum of 2.27 kg/m² of Grade 500E reinforcing mesh fabric which conforms with AS/NZS4671:2019.

Super Ductile 500E meets these requirements:

- Grade 500E (seismic) as per AS/NZS 4671:2019
High tensile – grade 500 (500MPa)
High ductility – class E (10% uniform elongation)
- Weight per m² complies with NZS 3604 (min 2.27kg/m²)



Hard Drawn Mesh

Fletcher Reinforcing offers a range of mesh sheet sizes and centres to meet the needs of typical New Zealand non-ductile applications.

Our range covers standard sheet sizes of 4.65m x 1.97m through to our larger economical sheets which are 6.15m x 2.42m. Centres are either 150 x 150mm or the 'step through' option of 300 x 300mm.



New Zealand Standards

Standards New Zealand controls the preparation and publishing of all national Standard Specifications and Codes of Practice in New Zealand.

They are developed by expert committees using a consensus-based process that facilitates public input.

The relevant Standards listed below, specify the mechanical properties of the steel used for concrete reinforcement, including welded fabric and methods of application in respect to concrete reinforcement.

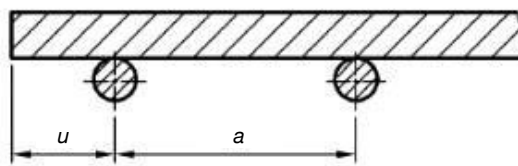
Visit www.standards.govt.nz for more information.

AS/NZS4671:2019

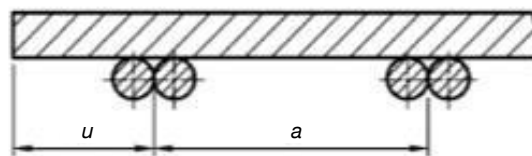
Specification for steel for the reinforcement of concrete, including Welded Fabric (mesh)

The pitch (a) of longitudinal bars and transverse bars shall not be less than 50 mm. The pitch shall be measured as

shown below. The tolerance of the pitch shall not be more than ± 0.075 times the specified value.



(a) Single-bar meshes



(b) Twin-bar meshes

Legend:

u = edge overhang of a bar in mesh (mm)

a = pitch of bars in a mesh (mm)

NZS3101:2006

Standard for The Design of Concrete Structures

This Standard lays out the development length and lap-splice requirements for plain wire mesh and deformed

wire mesh, and is the basis of any pertinent calculations or recommendations given in this Product Guide.

Load-Bearing Equivalents

Hard Drawn Mesh

			Standard			
Conventional Designation	Wire Diameter	Centres	Length (mm)	Width (mm)	Nett Cover (m²)	Fletcher Reinforcing Item
668	4.0	150	4560	1980	7.525	668L
665	5.3	150	4560	1980	7.525	665L
663	6.3	150	4560	1980	7.525	663L
661	7.5	150	4560	1980	7.525	661L

			300 Centres			
Conventional Designation	Wire Diameter (mm)	Centres	Length (mm)	Width (mm)	Nett Cover (m²)	Fletcher Reinforcing Item
668	5.6	300	5000	2240	11.20	84/10
665	7.5	300	5000	2240	11.20	147/10

Equivalents are based on load-bearing capacity i.e. the nominal sectional area of steel per metre width.

Note: Additional meshes are available as a special order. Minimum order quantities will apply. Please contact your local Fletcher Reinforcing Branch for further details.

Super Ductile 500E Mesh

Conventional Designation	Wire Diameter (mm)	Centres	Length (mm)	Width (mm)	Nett Cover (m²)	Fletcher Reinforcing Item
665	6.1	200	5050	2020	8.312	SE62Res*
665	6.1	200	5850	2420	11.93	SE62*
665	7.5	300	5000	2270	10.08	SE73DE
664	7.0	200	5650	2220	10.432	SE72
662	8.0	200	5650	2220	10.432	SE82
661	8.0	150	5650	2220	10.165	SE815

***What does SE62 mean?** AS/NZS 4671:2019 designates letters to be used to identify welded mesh products:

S = Square (shape of grid centres)

E = Seismic grade (earthquake)

6 = 6mm wire

2 = 200mm centres

Equivalents are based on load-bearing capacity i.e. the nominal sectional area of steel per metre width.

Hard Drawn Wire Mesh

485 Mpa							Min: 500 MPa Max: 600MPa					
Wire Diameter (mm)	Centres (mm)	Cross Section (mm ² /m)	Mass per m ² (kg/m ²)	Nett Cover (m ²)	Fletcher Reinforcing Item	Conventional Designation	Wire Diameter (mm)	Centres (m ²)	Cross Section (mm ² /m)	Mass per m ² (kg/m ²)	Nett Cover (m ²)	Fletcher Reinforcing Item
4.0	150	83.8	1.315	7.525	668L	668						
5.6	300	82.1	1.289	11.20	84/10	668						

Super Ductile Wire Mesh

5.3	150	147.1	2.309	7.525	665L	665	6.1	200	146.1	2.294	8.312	SE62Res
7.5	300	147.3	2.312	11.20	147/10	665	6.1	200	146.1	2.294	11.93	SE62
						665	7.5	300	147.3	2.312	10.08	SE73DE
						664	7.0	200	192.4	3.02	10.432	SE72
6.3	150	207.8	3.263	7.525	663L	663						
						662	8.0	200	251.3	3.946	10.432	SE82
						661	8.0	150	335.1	5.261	10.165	SE815

Equivalents are based on load-bearing capacity i.e. the nominal sectional area of steel per metre width.

Note: Additional meshes are available as a special order. Minimum order quantities will apply. Please contact your local Fletcher Reinforcing Branch for further details.

Seismic Grade Reinforcing Mesh SE62 Res NI



Mesh Specification

Product Description: 5.05m x 2.02m – 200 x 200 Grid R6.1 Line Wire, R6.1 Cross Wire.
Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	6.1 R	200	5050	11	25	146.1	0.2294	12.74
Cross Wire	6.1 R	200	2020	26	10	146.1	0.2294	12.05

Gross Sheet Weight (kg):	24.79
Mass Per Square Meter (kg/m ²):	2.294
Gross Sheet Area (m ²)	10.201
Nett Cover (m ²)	8.312

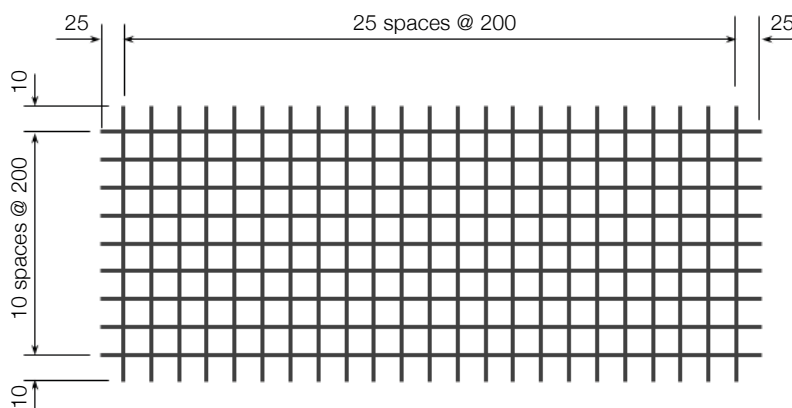
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³)	0.0933
Bundle Weight (Tonnes):	0.6198

Mechanical Properties (characteristic values)

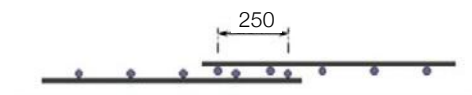
Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 7.3kN

Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Seismic Grade Reinforcing Mesh

SE62 NI

**SUPER
DUCTILE 500E[™]**

Mesh Specification

Product Description: 5.85m x 2.42m – 200 x 200 Grid R6.1 Line Wire, R6.1 Cross Wire.

Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	6.1 R	200	5850	13	25	146.1	0.2294	17.45
Cross Wire	6.1 R	200	2420	30	10	146.1	0.2294	16.65

Gross Sheet Weight (kg):	34.10
Mass Per Square Meter (kg/m ²):	2.294
Gross Sheet Area (m ²)	14.157
Nett Cover (m ²)	11.932

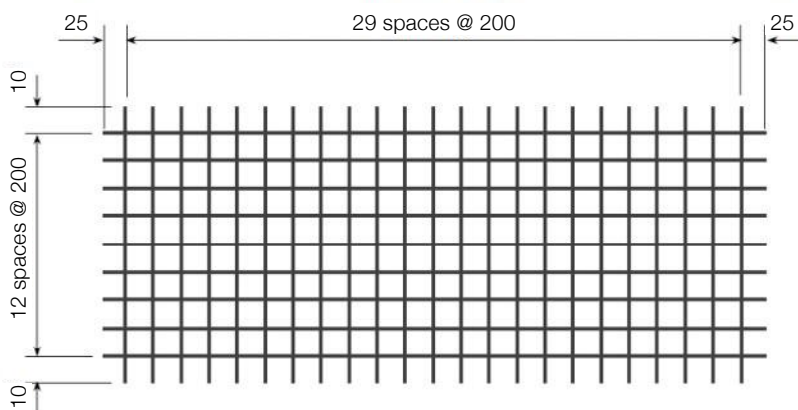
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³)	2.2453
Bundle Weight (Tonnes):	0.8525

Mechanical Properties (characteristic values)

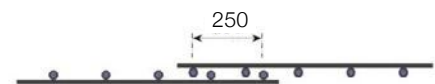
Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 7.3kN

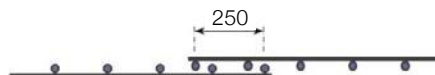
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Seismic Grade Reinforcing Mesh

SE72 NI



Mesh Specification

Product Description: 5.65m x 2.22m – 200 x 200 Grid R7.0 Line Wire, R7.0 Cross Wire.

Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	7.0 R	200	5650	12	25	192.4	0.3021	20.48
Cross Wire	7.0 R	200	2220	29	10	192.4	0.3021	19.45

Gross Sheet Weight (kg):	39.93
Mass Per Square Meter (kg/m ²):	3.021
Gross Sheet Area (m ²)	12.543
Nett Cover (m ²)	10.432

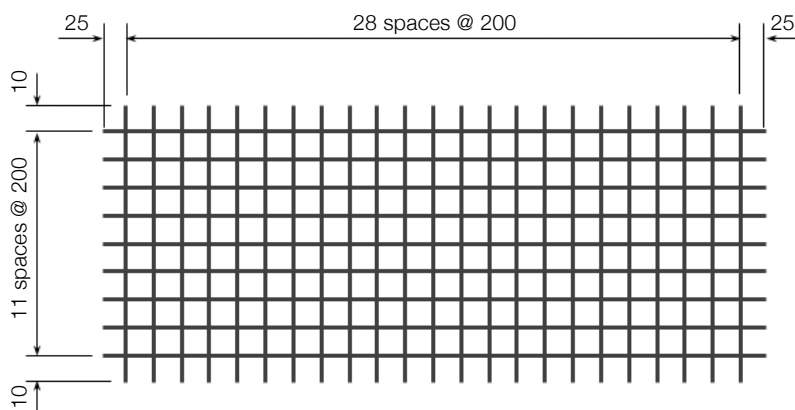
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³)	2.2828
Bundle Weight (Tonnes):	0.9983

Mechanical Properties (characteristic values)

Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 9.6kN

Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Seismic Grade Reinforcing Mesh

SE73DE NI

**SUPER
DUCTILE 500E[™]**

Mesh Specification

Product Description: 5.0m x 2.27m – 300 x 300 Grid R7.5 Line Wire, R7.5 Cross Wire.
Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	7.5 R	300	5000	8	25	147.3	0.3468	13.87
Edge Wire	5.5 R	75	5000	2	25		0.1865	1.87
Cross Wire	7.5 R	300	2270	19	10	147.3	0.3468	14.96

Gross Sheet Weight (kg):	30.69
Mass Per Square Meter (kg/m ²):	2.312
Gross Sheet Area (m ²)	11.35
Nett Cover (m ²)	10.08

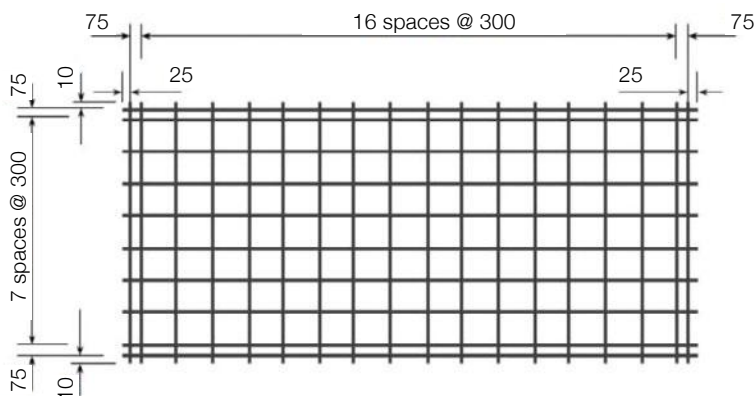
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	20
Estimated Cubic (m ³)	0.1277
Bundle Weight (Tonnes):	0.6139

Mechanical Properties (characteristic values)

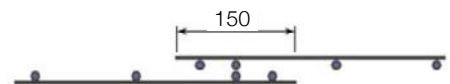
Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 11.1kN

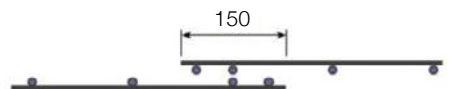
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Seismic Grade Reinforcing Mesh SE82 NI



Mesh Specification

Product Description: 5.65m x 2.22m — 200 x 200 Grid R8.0 Line Wire, R8.0 Cross Wire.
Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	8.0 R	200	5650	12	25	251.3	0.3946	26.75
Cross Wire	8.0 R	200	2220	29	10	251.3	0.3946	25.40

Gross Sheet Weight (kg):	52.16
Mass Per Square Meter (kg/m ²):	3.946
Gross Sheet Area (m ²)	12.543
Nett Cover (m ²)	10.432

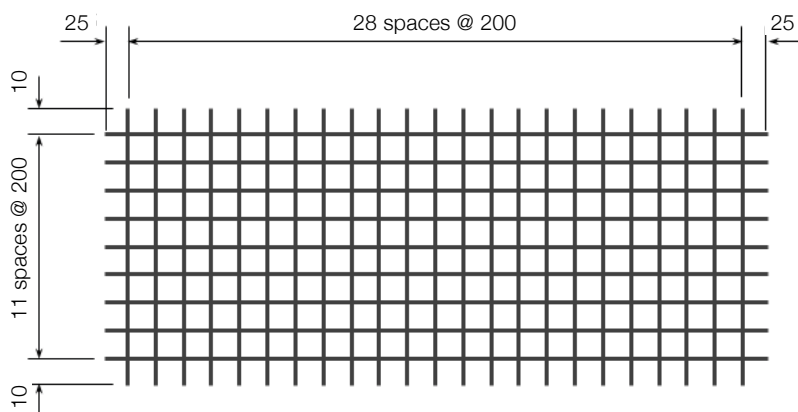
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³)	2.6089
Bundle Weight (Tonnes):	1.3040

Mechanical Properties (characteristic values)

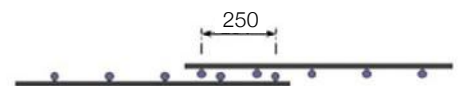
Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 12.6kN

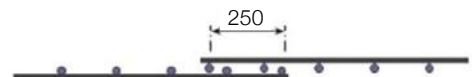
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Seismic Grade Reinforcing Mesh

SE815 NI

**SUPER
DUCTILE 500E[™]**

Mesh Specification

Product Description: 5.65m x 2.22m – 150 x 150 Grid R8.0 Line Wire, R8.0 Cross Wire.
Product is fully tested for conformance to AS/NZS 4671:2019.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	8.0 R	150	5650	15	50	335.1	0.3946	33.44
Cross Wire	8.0 R	150	2220	38	60	335.1	0.3946	33.29

Gross Sheet Weight (kg):	66.73
Mass Per Square Meter (kg/m ²):	5.261
Gross Sheet Area (m ²)	12.543
Nett Cover (m ²)	10.165

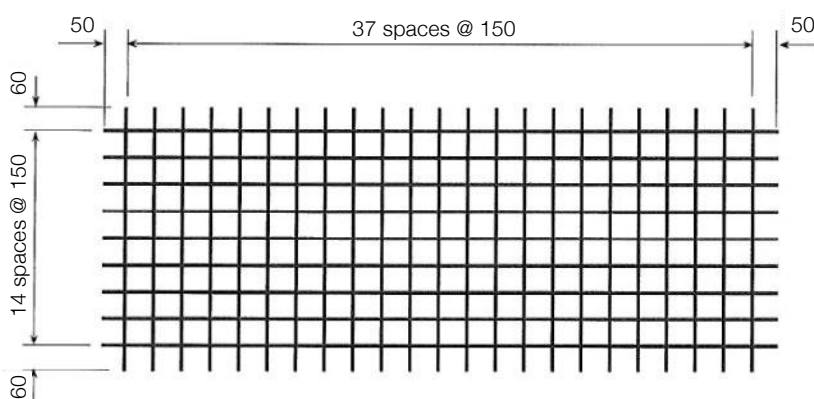
Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³)	2.6089
Bundle Weight (Tonnes):	1.6683

Mechanical Properties (characteristic values)

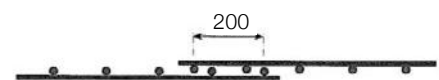
Uniform Elongation %	Yield Strength		Tensile Ratio	
	Min	Max	Min	Max
≥ 10 %	500MPa	600MPa	1.15	1.4

Minimum weld shear strength 12.6kN

Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Hard Drawn Reinforcing Mesh 668L NI

Mesh Specification

Product Description: 4.56m x 1.98m – 150 x 150 Grid R4.0 Line Wire, R4.0 Cross Wire.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	4.0 R	150	4560	14	30	83.8	0.0986	6.29
Cross Wire	4.0 R	150	1980	31	15	83.8	0.0986	6.05

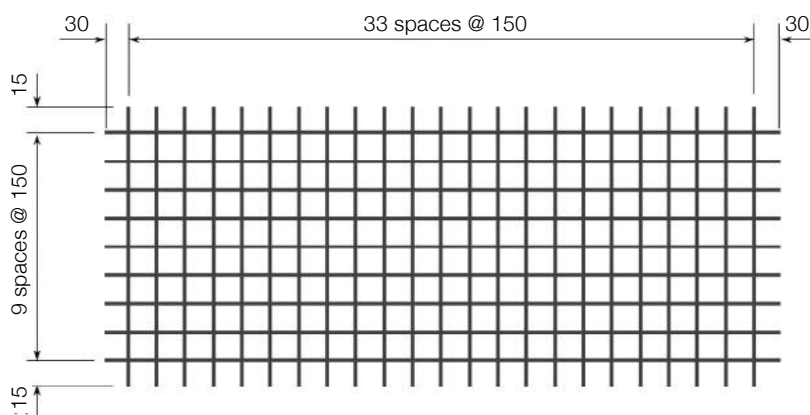
Gross Sheet Weight (kg):	12.34
Mass Per Square Meter (kg/m ²):	1.315
Gross Sheet Area (m ²)	9.029
Nett Cover (m ²)	7.525

Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³) Bundle:	0.90
Bundle Weight (Kg):	309

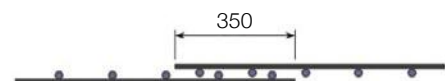
Mechanical Properties (characteristic values)

Wire Diameter	0.2% Proof Stress	
	Min	Max
4.0mm R	485MPa	750MPa

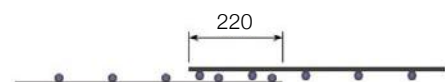
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Hard Drawn Reinforcing Mesh

665L NI

Mesh Specification

Product Description: 4.56m x 1.98m – 150 x 150 Grid R5.3 Line Wire, R5.3 Cross Wire.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	5.3 R	150	4560	14	30	147.1	0.1732	11.06
Cross Wire	5.3 R	150	1980	31	15	147.1	0.1732	10.63

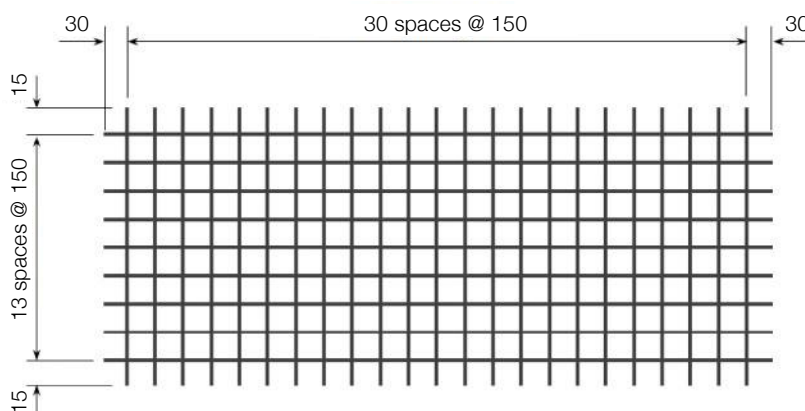
Gross Sheet Weight (kg):	21.69
Mass Per Square Meter (kg/m ²):	2.309
Gross Sheet Area (m ²)	9.029
Nett Cover (m ²)	7.525

Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle:	25
Estimated Cubic (m ³) Bundle:	1.26
Bundle Weight (Kg):	542

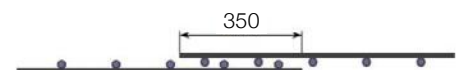
Mechanical Properties (characteristic values)

Wire Diameter	0.2% Proof Stress	
	Min	Max
5.3mm R	485MPa	750MPa

Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Hard Drawn Reinforcing Mesh 663L NI

Mesh Specification

Product Description: 4.56m x 1.98m – 150 x 150 Grid R6.3 Line Wire, R6.3 Cross Wire.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	6.3 R	150	4560	14	30	207.8	0.2447	15.62
Cross Wire	6.3 R	150	1980	31	15	207.8	0.2447	15.10

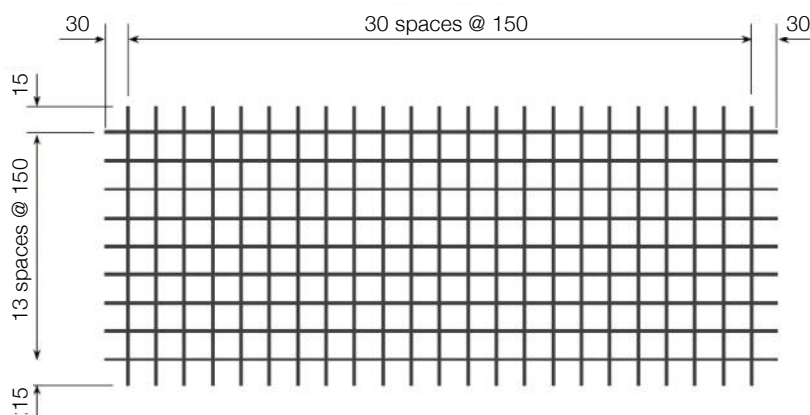
Gross Sheet Weight (kg):	30.72
Mass Per Square Meter (kg/m ²):	3.263
Gross Sheet Area (m ²)	9.029
Nett Cover (m ²)	7.525

Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle: 2	25
Estimated Cubic (m ³) Bundle:	1.94
Bundle Weight (Kg):	766

Mechanical Properties (characteristic values)

Wire Diameter	0.2% Proof Stress	
	Min	Max
6.3mm R	485MPa	750MPa

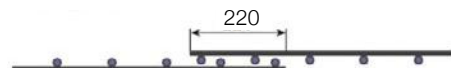
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Hard Drawn Reinforcing Mesh

84/10 NI

Mesh Specification

Product Description: 5.0m x 2.24m – 300 x 300 Grid D5.6 Line Wire, D5.6 Cross Wire.

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	4.0 R	300	5000	6	50	82.1	0.1933	5.80
Edge Wire	4.0 R	50	5000	4	50		0.0986	1.97
Cross Wire	5.6 R	300	2240	19	20	82.1	0.1933	8.23

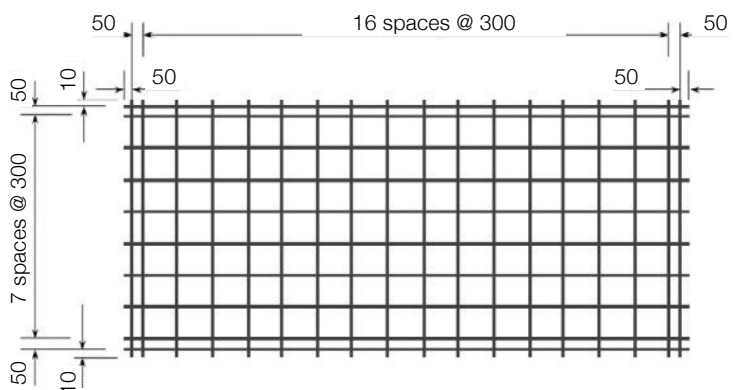
Gross Sheet Weight (kg):	16.00
Mass Per Square Meter (kg/m ²):	1.289
Gross Sheet Area (m ²)	11.2
Nett Cover (m ²)	10.08

Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle:	25
Estimated Cubic (m ³) Bundle:	1.45
Bundle Weight (Kg):	400

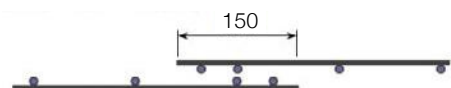
Mechanical Properties (characteristic values)

Wire Diameter	0.2% Proof Stress	
	Min	Max
5.6 R	485MPa	750MPa

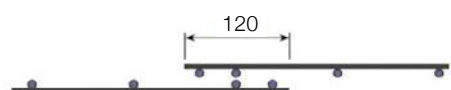
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Hard Drawn Reinforcing Mesh 147/10 NI

Mesh Specification

Product Description: 5.0m x 2.24m – 300 x 300 Grid D7.5 Line Wire, D7.5 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)	mm ² /m	Wire (kg/m)	Weight (kg)
Longitudinal Wire	7.5 D	300	5000	6	50	147.3	0.3468	10.40
Edge Wire	5.3 D	50	5000	4	50		0.1737	3.46
Cross Wire	7.5 D	300	2240	19	20	147.3	0.3468	14.76

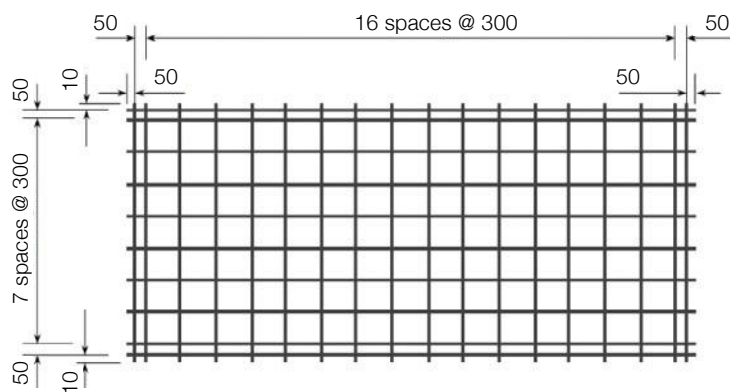
Gross Sheet Weight (kg):	28.63
Mass Per Square Meter (kg/m ²):	2.312
Gross Sheet Area (m ²)	11.20
Nett Cover (m ²)	10.08

Ratio Stack & Turned (Y/N):	Y
No. of Sheets / Bundle:	25
Estimated Cubic (m ³) Bundle:	2.4
Bundle Weight (Kg):	715

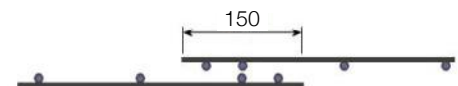
Mechanical Properties (characteristic values)

Wire Diameter	0.2% Proof Stress	
	Min	Max
7.50 D	485MPa	750MPa

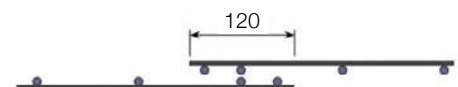
Mesh Sketch (not to scale)



Lapping on Ends:



Lapping on Sides:



*All measurements/weights approximate.

Notes

[illegible]

Notes

[illegible]

Notes

[illegible]

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