

Reinforcing Mesh Product Guide

"Reinforcing New Zealand since 1954"

Super Ductile 500E & Hard Drawn
SOUTH ISLAND

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**TM

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/NZS4671:2001 and B1VM1 Paragraph 14. **Super Ductile 500E** meets these requirements:

- Grade 500E (seismic) as per AS/NZS 4671:2001
 - 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 x150mm or the 'step through' option of 300 x 300mm.

New Zealand Standards

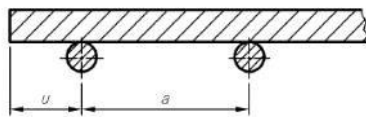
Standards New Zealand controls the preparation and publishing of all national Standard Specifications and Codes of Practice in New Zealand. They are developed by expert committees using a consensus-based process that facilitates public input. The relevant Standards listed below, specify the mechanical 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.

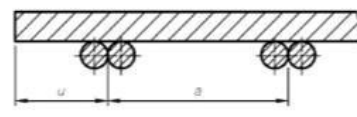
AS/NZS4671:2001

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 a 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.

Hard Drawn Mesh Load-bearing Equivalents

Conventional Designation	Centres	Wire Ø	Standard				Fletcher Reinforcing Item
			Length (mm)	Width (mm)	Nett (m ²)		
668	150	4.0	4650	1970	7.525		668L
665	150	5.3	4650	1970	7.525		665L
663	150	6.3	4650	1970	7.525		663L
662	150	7.1					
661	150	7.5					

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 Load-bearing Equivalents

Conventional Designation	Centres	Wire Ø	Length	Width	Nett Cover	Fletcher Reinforcing Item
			(mm)	(mm)	(m ²)	
665	200	6.1	5050	2050	8.64	SE62Res
665	200	6.1	5050	2020	8.6	SE62
664	200	7.0	6400	2370	13.6	SE72
662	200	8.0	6400	2370	13.6	SE82
661	200	9.0	6410	2380	13.6	SE92

What does **SE62** mean?

AS/NZS 4671:2001 designates letters to be used to identify welded mesh products:

S = Square (shape of grid centres)
E = Seismic grade (**E**arthquake)

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							Super Ductile wire mesh Min: 500 MPa Max: 600MPa						
Fletcher Reinforcing Item	Wire Diameter (mm)	Centres (mm)	Cross Section (mm ² /m)	Mass per m ² (kg/m ²)	Nett Cover (m ²)		Fletcher Reinforcing Item	Wire Diameter (mm)	Centres (mm)	Cross Section (mm ² /m)	Mass per m ² (kg/m ²)	Nett Cover (m ²)	
668L	4.0	150	83.8	1.315	7.525	668	SE62Res	6.1	200	146.1	2.294	8.64	665
							SE62	6.1	200	146.1	2.294	8.6	665
							SE73DE	7.5	300	147.3	2.312		665
665L	5.3	150	147.1	2.309	7.525	665							664
													664
													663
663L	6.3	150	207.8	3.263	7.525	663							663
													662
													661

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

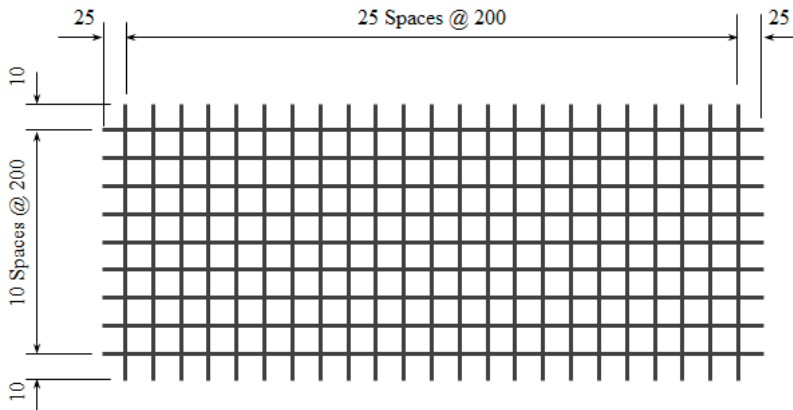
SE62 Res SI

Mesh Specification

Product Description: 5.05m x 2.02m — 200 x 200 Grid R6.1 Line Wire, R6.1 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	6.1 R	200	5050	11	25	25	146.1	0.2294	12.77
Cross Wire	6.1 R	200	2020	26	10	10	146.1	0.2294	12.07
GROSS SHEET WEIGHT (Kg):									24.84
MASS PER SQ METER (Kg/m²):									2.294

Mesh Sketch (not to scale)



GROSS SHEET AREA (m ²)	10.201
NETT COVER (m ²)	8.64
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE:	25
ESTIMATED CUBIC (m ³)	0.0933
BUNDLE WEIGHT (Tonnes):	0.6211

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



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

*All measurements/weights approximate.

Mesh App:

Download our free smart-phone app by visiting the Apple or Google stores. Alternatively, scan the QR code from your phone to download directly.



Seismic Grade Reinforcing Mesh

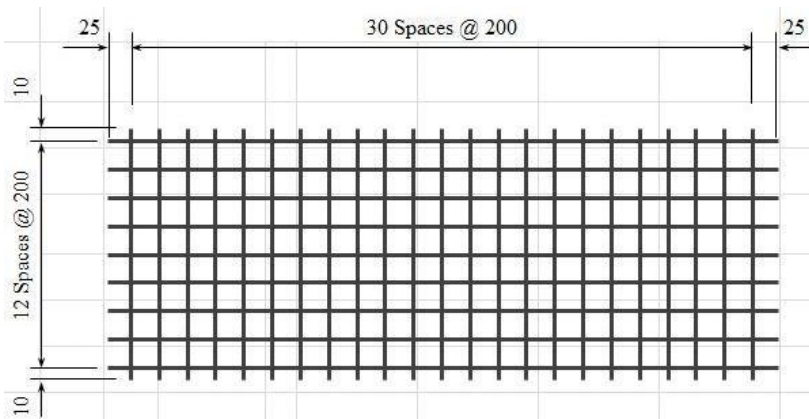
SE62 SI

Mesh Specification

Product Description: 6.05m x 2.42m — 200 x 200 Grid R6.1 Line Wire, R6.1 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	6.1 R	200	6050	13	25	25	146.1	0.2294	18.08
Cross Wire	6.1 R	200	2420	31	10	10	146.1	0.2294	17.25
GROSS SHEET WEIGHT (Kg):									35.33
MASS PER SQ METER (Kg/m²):									2.294

Mesh Sketch (not to scale)

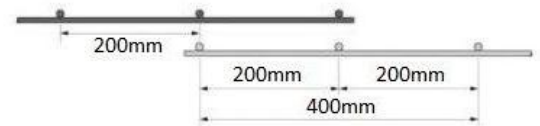


GROSS SHEET AREA (m ²)	14.641
NETT COVER (m ²)	12.76
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	2.3221
BUNDLE WEIGHT (Tonnes):	0.8833

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



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

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Seismic Grade Reinforcing Mesh

SE72DE SI

Mesh Specification

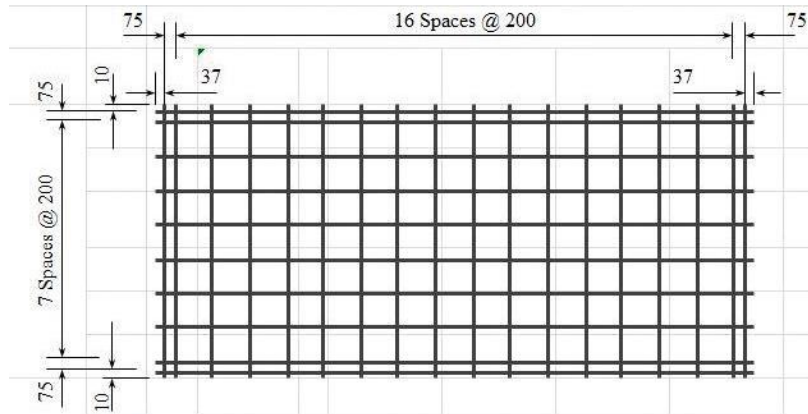
Product Description: 6.425m x 2.37m — 200 x 200 Grid R7.0 Line Wire, R7.0 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	7.0 R	200	6425	10	37	37	192.4	0.3021	19.44
Edge Wire	5.5 R	75	6425	4	37	37		0.1865	4.81
Cross Wire	7.0 R	200	2370	34	10	10	192.4	0.3021	24.38

GROSS SHEET WEIGHT (Kg): 48.63

MASS PER SQ METER (Kg/m²): 3.021

Mesh Sketch (not to scale)



GROSS SHEET AREA (m²) 15.227

NETT COVER (m²) 13.642

Ratio STACK & TURNED (Y/N): Y

No. OF SHEETS / BUNDLE: 2 25

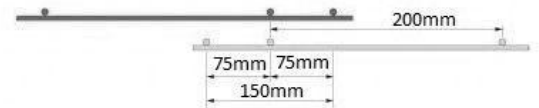
ESTIMATED CUBIC (m³) 0.1599

BUNDLE WEIGHT (Tonnes): 1.2158

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



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

*All measurements/weights approximate.

Mesh App:

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Seismic Grade Reinforcing Mesh

SE73DE SI

Mesh Specification

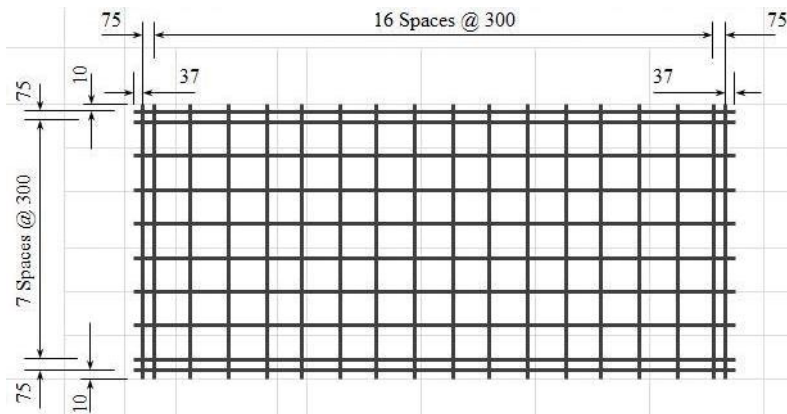
Product Description: 5.025m x 2.27m — 300 x 300 Grid R7.5 Line Wire, R7.5 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	7.5 R	300	5000	6	37	37	147.3	0.3468	10.47
Edge Wire	5.5 R	75	5000	4	37	37		0.1865	3.76
Cross Wire	7.5 R	300	2270	19	10	10	147.3	0.3468	14.98

GROSS SHEET WEIGHT (Kg): 29.21

MASS PER SQ METER (Kg/m²): 2.312

Mesh Sketch (not to scale)

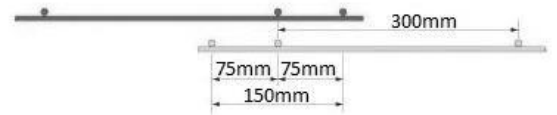


GROSS SHEET AREA (m ²)	11.407
NETT COVER (m ²)	10.082
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	0.1283
BUNDLE WEIGHT (Tonnes):	0.7302

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



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

*All measurements/weights approximate.

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Seismic Grade Reinforcing Mesh

SE82DE SI

Mesh Specification

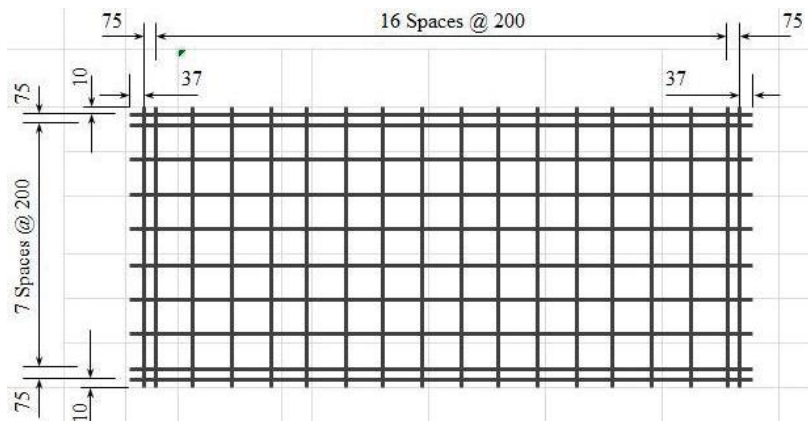
Product Description: 6.425m x 2.37m — 200 x 200 Grid R8.0 Line Wire, R8.0 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	8.0 R	200	6425	10	37	37	251.3	0.3946	25.38
Edge Wire	5.5 R	75	6425	4	37	37		0.1865	4.81
Cross Wire	8.0 R	200	2370	34	10	10	251.3	0.3946	31.84

GROSS SHEET WEIGHT (Kg): 62.03

MASS PER SQ METER (Kg/m²): 3.946

Mesh Sketch (not to scale)



GROSS SHEET AREA (m ²)	15.227
NETT COVER (m ²)	13.642
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	0.1827
BUNDLE WEIGHT (Tonnes):	1.5507

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



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

*All measurements/weights approximate.

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Seismic Grade Reinforcing Mesh

SE92DE SI

Mesh Specification

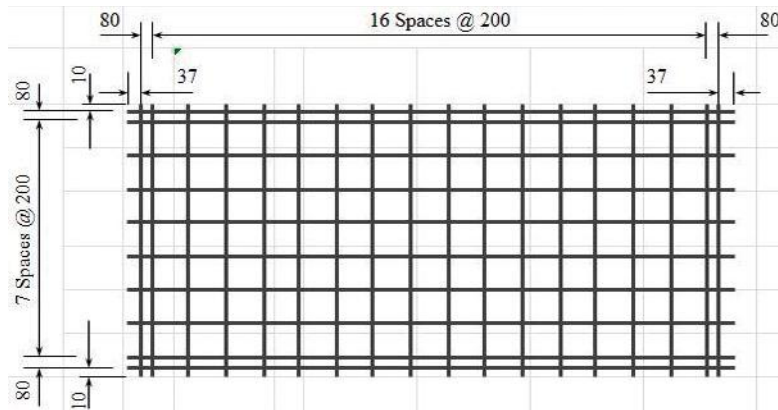
Product Description: 6.435m x 2.38m — 200 x 200 Grid R9.0 Line Wire, R9.0 Cross Wire

	Wire Dia. (mm)	Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm ² /m	Wire kg/m	Weight (kg)
Longitudinal Wire	9.0 R	200	6435	10	37	37	318.1	0.4994	32.17
Edge Wire	6.1 R	80	6435	4	37	37		0.2294	5.92
Cross Wire	9.0 R	200	2380	34	10	10	318.1	0.4994	40.45

GROSS SHEET WEIGHT (Kg): 78.54

MASS PER SQ METER (Kg/m²): 4.994

Mesh Sketch (not to scale)



GROSS SHEET AREA (m²) 15.315

NETT COVER (m²) 13.58

Ratio STACK & TURNED (Y/N): Y

No. OF SHEETS / BUNDLE: 2 25

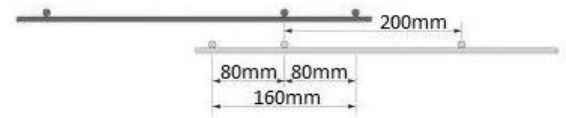
ESTIMATED CUBIC (m³) 0.2068

BUNDLE WEIGHT (Tonnes): 1.9635

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 15.9kN



Product is fully tested for conformance to AS/NZS 4671:2001 and B1/VM1 paragraph 14-.

*All measurements/weights approximate.

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Hard Drawn Reinforcing Mesh

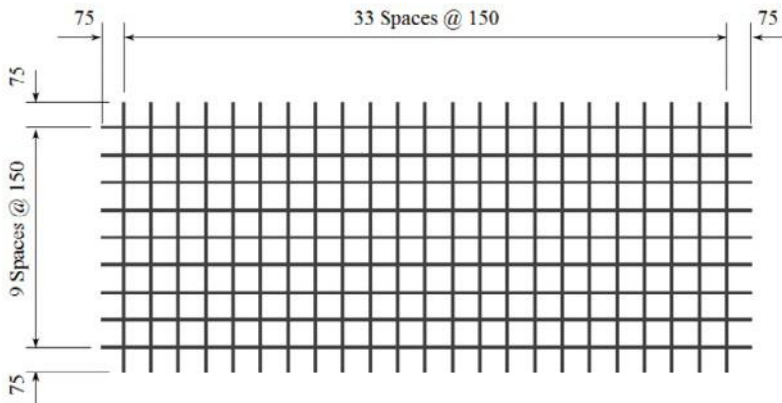
668L SI

Mesh Specification

Product Description: 4.65m x 1.97m — 150 x 150 Grid D4.0 Line Wire, D4.0 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 D	150	4650	14	75	75	83.8	0.0986	6.42
Cross Wire	4.0 D	150	1970	31	10	10	83.8	0.0986	6.02
GROSS SHEET WEIGHT (Kg):									12.44
MASS PER SQ METER (Kg/m²):									1.315

Mesh Sketch (not to scale)

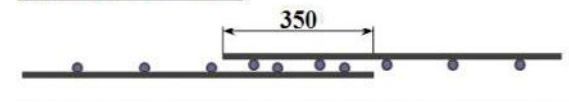


GROSS SHEET AREA (m ²)	9.161
NETT COVER (m ²)	7.525
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	0.0550
BUNDLE WEIGHT (Tonnes):	0.3110

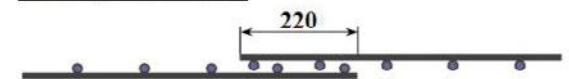
Mechanical Properties

Wire Diam	0.2% Proof Stress	
	Min	Max
< 5.0mm	485MPa	
≥ 5.0mm	485MPa	750MPa

LAPPING ON ENDS



LAPPING ON SIDES



*All measurements/weights approximate.



Hard Drawn Reinforcing Mesh

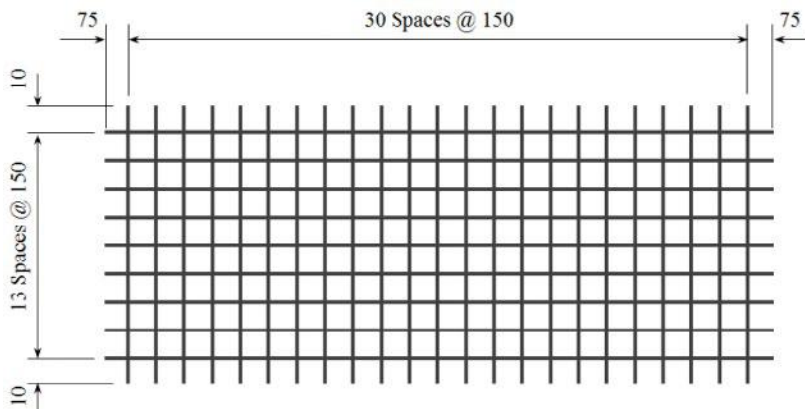
665L SI

Mesh Specification

Product Description: 4.65m x 1.97m — 150 x 150 Grid D5.3 Line Wire, D5.3 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 D	150	4650	14	75	75	147.1	0.1732	11.28
Cross Wire	5.3 D	150	1970	31	10	10	147.1	0.1732	10.58
GROSS SHEET WEIGHT (Kg):									21.85
MASS PER SQ METER (Kg/m²):									2.309

Mesh Sketch (not to scale)

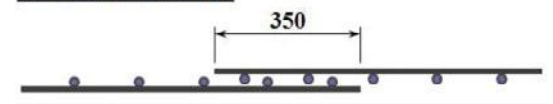


GROSS SHEET AREA (m ²)	9.161
NETT COVER (m ²)	7.525
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	0.0728
BUNDLE WEIGHT (Tonnes):	0.5463

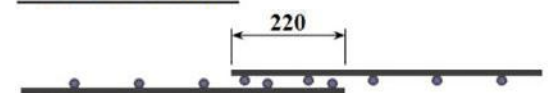
Mechanical Properties

Wire Diam	0.2% Proof Stress	
	Min	Max
< 5.0mm	485MPa	
≥ 5.0mm	485MPa	750MPa

LAPPING ON ENDS



LAPPING ON SIDES



*All measurements/weights approximate.

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Hard Drawn Reinforcing Mesh

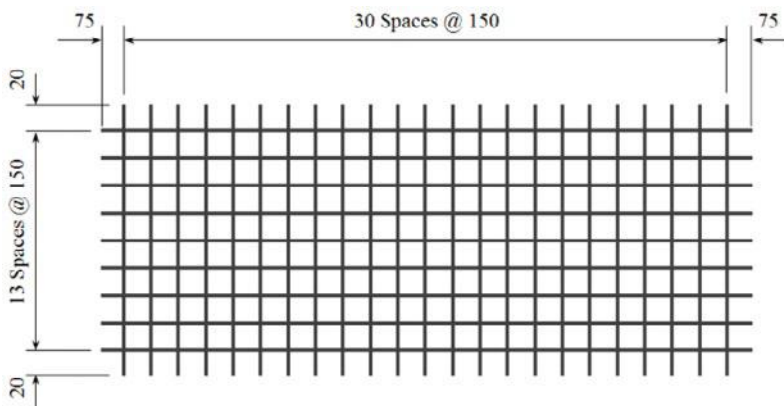
663L SI

Mesh Specification

Product Description: 4.65m x 1.97m — 150 x 150 Grid D6.3 Line Wire, D6.3 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 D	150	4650	14	75	75	207.8	0.2447	15.93
Cross Wire	6.3 D	150	1970	31	10	10	207.8	0.2447	14.94
GROSS SHEET WEIGHT (Kg):									30.87
MASS PER SQ METER (Kg/m²):									3.263

Mesh Sketch (not to scale)

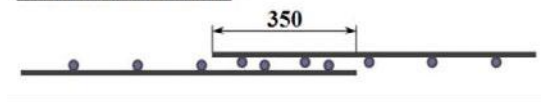


GROSS SHEET AREA (m ²)	9.161
NETT COVER (m ²)	7.525
Ratio STACK & TURNED (Y/N):	Y
No. OF SHEETS / BUNDLE: 2	25
ESTIMATED CUBIC (m ³)	0.0866
BUNDLE WEIGHT (Tonnes):	0.7719

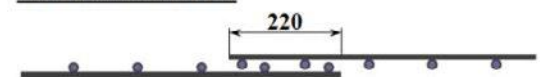
Mechanical Properties

Wire Diam	0.2% Proof Stress	
	Min	Max
< 5.0mm	485MPa	
≥ 5.0mm	485MPa	750MPa

LAPPING ON ENDS



LAPPING ON SIDES



*All measurements/weights approximate.

Mesh App:

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Notes

Overview

The Fletcher Reinforcing Smart Phone App is designed to offer you immediate access to the information you need about our ranges of Super Ductile and Hard Drawn meshes.

This Guide will outline how to access this information quickly and easily.



Downloading

Available for both the Apple iPhone and all Android phones, the free download can be accessed through the Apple App Store and the Android Market. Just search for **“Fletcher Reinforcing”**

Alternatively, scan this QR Code from your phone to be taken to the appropriate download:



Current Devices

The App is currently available for:

- iPhone
- Android phones
- iPad (not optimised)

