

Lapping mesh

Welded Reinforcing mesh Lap-splice requirements are set by the **NZ Standards Association in NZS3101:2006 Code of Practice for the Design of Concrete Structures** and are subject to a number of contributing factors as follows:

1. Type of Bar used: Plain or deformed
2. Diameter of Bar
3. Spacing of main bars or 'Edge bars' where applicable.
4. Style of mesh:
 - a. Standard configuration with all wire spaced equally and perimeter bar
 - b. Double edge
 - c. Mesh without perimeter bar

You should always refer to the [United Steel mesh specification for the correct lapping](#).

From the New Zealand Standard **NZS3101:2006** the 'relevant clauses' are:

1. (NZS3101:2006 C8.6.8.2) "Development length of welded wire fabric-cross wires considered...An embedment of at least two cross wires 50mm or more beyond the point of critical section is adequate to develop the yield strength"
This clause requires the lap to be 1 mesh square plus 50mm and any bar extending from the outermost wire (overhang) is not part of the lap.
2. (NZS 3101:2006 C8.6.4) "The development of plain bars in tension must not rely on straight development length as a result"
Mesh made from plain wires can only be lapped according to the above clause. NZS3101:2006 C8.6.8.2.

Ductile Plus™ Double edge mesh: Plain bars

UNITED STEEL MESH SIZES APPLICABLE.

"NZS3101:2006 Clause. 8.6.8.2." Requires as a lap of one mesh square plus min 50mm. The minimum lap for plain wire is 150mm.

Description	Edge bar spacing (mm)	Lap (mm)	Total length (m)	Total Width (m)	Calculated NETT Cover (m ²)
SE73DE Plus	75	150	5.05	2.27	10.08
SE73LDE Plus	75	150	7.1	2.27	14.49

Ductile Plus™ Standard configuration Mesh: Plain bars

"NZS3101:2006 Clause. 8.6.8.2." Requires as a lap of one mesh square plus min 50mm. The minimum lap for plain wire is 150mm.

Description	Lap (mm)	Total length (mm)	Total Width (m)	Calculated NETT Cover (m ²)
SE62	250	5.05	2.02	8.31

Standard configuration Mesh: Deformed or Plain bars

Description	Lap (mm)	Total length (mm)	Total Width (m)	Calculated NETT Cover (m ²)
661STD to 668STD	200	4.56	1.97	7.525
661/15 to 668/15	200	6.02	2.42	12.76

Double edge mesh: Deformed bars

UNITED STEEL MESH SIZES APPLICABLE.

“NZS3101:2006 Clause. 8.6.8.2.” Requires a lap of one mesh square plus min 50mm. The minimum lap for deformed wire is 100mm.

Description	Edge bar spacing (mm)	Lap (mm)	Total length (m)	Total Width (m)	Calculated NETT Cover (m ²)
M84DE	50	100	4.9	2.2	10.1
M147DE	50	100	4.9	2.2	10.1
M147DE-7m	50	100	7.05	2.2	14.49
M212DE-7m	50	100	7.05	2.2	14.49

Double edge mesh: Plain bars

UNITED STEEL MESH SIZES APPLICABLE.

“NZS3101:2006 Clause. 8.6.8.2.” Requires a lap of one mesh square plus min 50mm. The minimum lap for plain wire is 150mm.

Description	Edge bar spacing (mm)	Lap (mm)	Total length (m)	Total Width (m)	Calculated NETT Cover (m ²)
C200	100	150	4.75	2.2	9.33
MDT-430-150	100	150	6.75	2.47	15.065
MDT-430-200	100	150	6.75	2.47	15.065
MDT-430-240	100	150	6.55	2.32	13.653
MDT-430-300	100	150	6.75	2.47	15.065
MDT-430-300-C	100	150	5.25	2.47	11.615
MDT-430-350	100	150	6.75	2.47	14.67
MDT-430-400	100	150	6.65	2.42	14.51
MDT-430-450	100	150	6.54	2.31	13.65

Mesh without perimeter wire: Deformed wire only

UNITED STEEL MESH SIZES APPLICABLE.

“NZS3101:2006 Clause. 8.6.8.3.” Cross wires not considered. Requires a 300mm minimum lap.

Description	Lap (mm)	Total length (m)	Total Width (m)	Calculated NETT Cover (m ²)
D147 & D212	300	6.9	2.4	13.86
D147 Large & D212 Large	300	7.5	2.7	17.28
D188	300	6.88	2.65	15.46
D265	300	6.78	2.7	15.55
D295	300	6.75	2.665	15.25

Notes

1. United Steel mesh is produced to meet AS/NZS 4671:2011 and laps calculated based on NZS3101:2006.
2. Design accuracy is the responsibility of the designer or specifier and all designs must meet NZS3101:2006
3. Lap lengths can be varied from the above if sufficient testing is carried out. Testing would need to be sufficient to ensure statistical validation of the obtained results and be carried out and reported on by a credible testing agency. It would be expected to include lap length tests, cross wire weld strength tests and specify all the relevant parameters which should include the minimum 28 day concrete compressive strength and wire mesh fabric properties (verified as meeting or exceeding AS/NZS 4671). The assessment would be required to look at the potential impact on concrete crack formation at high stress levels, i.e. the lap length test performance may be adequate but additional lap length allowance is still required to limit crack formation resulting from loss of reinforcement bond. Such testing and assessment would normally be expected to be accompanied by a technical opinion from a building professional.