MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Ductile steel reinforcing mesh – Questions and Answers 4 March 2016

What is this product?

Ductile steel reinforcing mesh, sometimes referred to as welded wire fabric, is typically used as reinforcement in concrete floor slabs. Mesh consists of a series of parallel longitudinal wires at a standard spacing welded to each other where they intersect. It is generally used to help reduce concrete cracks/limit concrete crack widths and strengthens the concrete slab.

So what changed after the Canterbury earthquakes?

Following the Canterbury earthquakes a review found that, while most modern houses met the Building Code's performance objective of life safety, some experienced damage greater than expected and in some cases need for building replacement.

Some of this damage may have been avoided if the concrete floor slabs contained reinforcing steel to tie the foundations together, and the steel had higher ductility. Changes were then made to the Acceptable Solution requiring the use of high ductility (Grade E) reinforcing steel in floor slabs in accordance with the Standard. This change had only marginal impact on building costs.

Is use of Grade 500E reinforcement mesh necessary to comply with the Building Code?

The easiest compliance pathway and therefore the most common practice, is to use the Acceptable Solution and Grade 500E mesh. However this is not compulsory. The Standard in question (AS/NZS 4671:2001) forms part of an Acceptable Solution to the New Zealand Building Code. Acceptable Solutions are non-mandatory ways that can be used to prove compliance with the Code. Other pathways are possible as long as the performance requirements of the Code are met.

Alternative solutions/products can be used instead of/or as well as Grade 500E reinforcement mesh and include conventional steel reinforcement bars and reinforcement with steel fibres, particularly in components and areas that are less critical for resisting earthquake forces. Further, non-compliance with a Standard does not necessarily result in non-compliance with the Code because a number of factors will be assessed when determining the overall resilience of the building.

What if my building consent specified use of Grade 500E reinforcement mesh and mesh produced by one of these companies has already been used?

Products need to meet the Standards specified in the design documentation that forms part of the approved building consent before a Code Compliance Certificate (CCC) can be issued by the Building Consent Authority (BCA). The Commerce Commission has notified the companies that initial testing shows that the products do not meet the Standard. Further investigation is underway.

We have advised BCAs that, whatever the outcome of the investigation, in our view residential houses that have used these products in concrete floor slabs will still comply with the Code. If a CCC has not been issued already, and it is too late to change the product for a complying one, it will not pass the Building Code Acceptable Solution compliance test while the compliance of the product itself is in doubt. If the BCA has not yet issued a CCC, it may require further paperwork to amend the specification and apply for the CCC based on an Alternative Solution.

If the product has been used in commercial or multi-storey buildings, decisions about compliance with the Code would need to be made on a case by case basis by the BCA.

What if this product has been used in my house and I've received a CCC?

We have advised BCAs that in this case, it's our view that there is no need to take any action because the house will still meet the structural (as well as the life safety) requirements in the Code.

If the Acceptable Solution involved use of Grade 500E reinforcement mesh to gain Code compliance, how can use of a lower ductile mesh be OK?

As new information about building performance emerges, and new products become available, we are continuing to adjust and improve good practice standards to ensure better building performance. Technically speaking, the use of Grade 500E reinforcement mesh is likely to be above and beyond the requirements specified in the Code, but we say it should be used because of the extra resilience it provides.

Because we believe the lower ductility product subject to the Commerce Commission investigation technically still meets the Code requirements, we are advising BCAs that we consider that they can accept houses built using these products as compliant (under an Alternative Solution). Drastic steps such as ripping up floor slabs would be completely unwarranted in these cases.

What do I do if my builder or I have purchased this product, but haven't poured the concrete yet?

If you have bought these products but have not yet installed them, you should discuss this with your builder. You should not install them if your building consent specifies the use of Grade 500E mesh as an Acceptable Solution as the compliance of these products with the Standard is in doubt.

What legal remedies are open to me if this product has been used in my building and is found not to comply?

Contact your builder in the first instance. The Building Act 2004 provides a set of implied warranties that a tradesperson automatically makes when you agree to them doing the work. This includes a warranty that all the materials used will be suitable.

Your builder will need to resolve these contractual issues with the supplier/manufacturer of the product. The use of steel not complying with the standard as advertised may be a contractual breach for which building owners could seek remedies through their builder.

What other consumer protection laws might apply?

The prohibitions in the Fair Trading Act 1986 relating to false or misleading statements also applies. The Commission has the ability to seek redress for affected parties in a settlement or as part of a court outcome from a prosecution. Home owners or builders also have the ability to take private action under the Fair Trading Act against the supplier/manufacturer through Courts or the Disputes Tribunal. A disputes tribunal can deal with claims below $15,000, or if everyone agrees, $20,000, and may award affected parties their money back as well as compensation.

Is this a product recall issue?

No. Product recalls are very rare and only occur when there is a serious safety concerns around the use of a product. This product is not unsafe, rather a product with higher ductility is more desirable to use in concrete slabs. The lower ductility mesh could be used for some construction work where high ductility mesh is not required – such as driveways and paths.

I'm unsure if this product has been used in my building? How do I find out?

If you've built a property with a concrete slab in it since mid-2012, the slab should contain a product described as Grade 500E mesh. You'll need to check your invoice to see whether it was bought from either of the two companies that are subject to the Commission's investigation. If your builder purchased the product, you will need to ask them to check their invoices to see which company manufactured the product.

How many different manufacturers supply these products and what is the market share of these two manufacturers?

Neither of two companies are dominant players in the market. However Euro Corporation has still produced a significant amount of product in recent years. It has sold approximately 380,000 sheets since mid-2012. Brilliance by comparison has sold about 20,000.

How does the building product compliance framework operate?

It is the responsibility of manufacturers, importer or suppliers of building products or systems to make sure their products are fit for purpose and for use in the New Zealand market and that they comply with the Building Code and relevant Standards.

When a product is specified in a building consent application the council must decide, on reasonable grounds, whether the proposed use of that product meets the performance requirements of the Building Code. Councils rely on the information and evidence provided by the manufacturer or supplier when assessing compliance. Misleading or false claims are breaches of consumer legislation and are dealt with by the Commerce Commission.

The Building Act has a provision for a product certification scheme, however certification is not mandatory and is only one way of demonstrating compliance with the Building Code. Product certificates issued under the scheme (CodeMark) are monitored by product certification bodies which carry out audits to check the product continues to be manufactured to meet Building Code requirements.

Does the industry need better information about the product compliance framework?

MBIE has been working to improve the quality of technical information provided by manufacturers and suppliers to assist councils in their decision making role. We have recently updated our product assurance guidance, which aims to help manufacturers and suppliers understand their obligations. A major educational campaign across the building sector to raise awareness of product assurance is soon to begin and will include information for councils on assessing the credibility and reliability of information provided by a manufacturer or supplier.