

# Sub-standard stainless bolts coming into Europe

**T**he EIFI Stainless Steel Fasteners Committee has discovered that imports of sub-standard stainless bolts are being made into Europe, and has been so concerned about the possible in-service problems that they have sent a letter of complaint to the European Antifraud Office, requesting action to prevent the continued importation. The letter, signed by Dr Giuseppe Marzorati, the Chairman of the EIFI Stainless Steel Fastener Group, points out the potential corrosion problems that could occur in service with such fasteners.

EIFI obtained several batches of imported bolts, and sent samples for chemical analysis to an independent laboratory. All of the bolts had the marking 'A2 70' on their heads, to signify compliance with EN ISO 3506 property class A2, at the strength grade 70. The samples were bolts to DIN 919, DIN931 and DIN933 configurations, in the diameter range M8 to M12.

A2 stainless is required to have a chromium content in the range 15 to 20% and a nickel content of 8 to 19 %. These two elements are the main ingredients giving corrosion resistance to stainless steel. In the imported bolts obtained by EIFI, the nickel content was in the range 3.17 to 3.30%, instead of having a minimum of 8% as required by the A2 standard. These nickel contents are even below the reduced 5 to 10% range allowed for type A1 stainless fasteners. This will inevitably result in a large reduction in corrosion resistance.

The chemical analyses also showed high manganese contents, and the significance of this element is that when nickel is reduced, manganese needs to be added to ensure the steel remains 'austenitic' in structure. The composition of the steels is similar to 'low-nickel' manganese austenitic stainless steels developed about 50 years ago. These steels were developed to avoid the high cost of the A2 type of stainless during a previous period of high

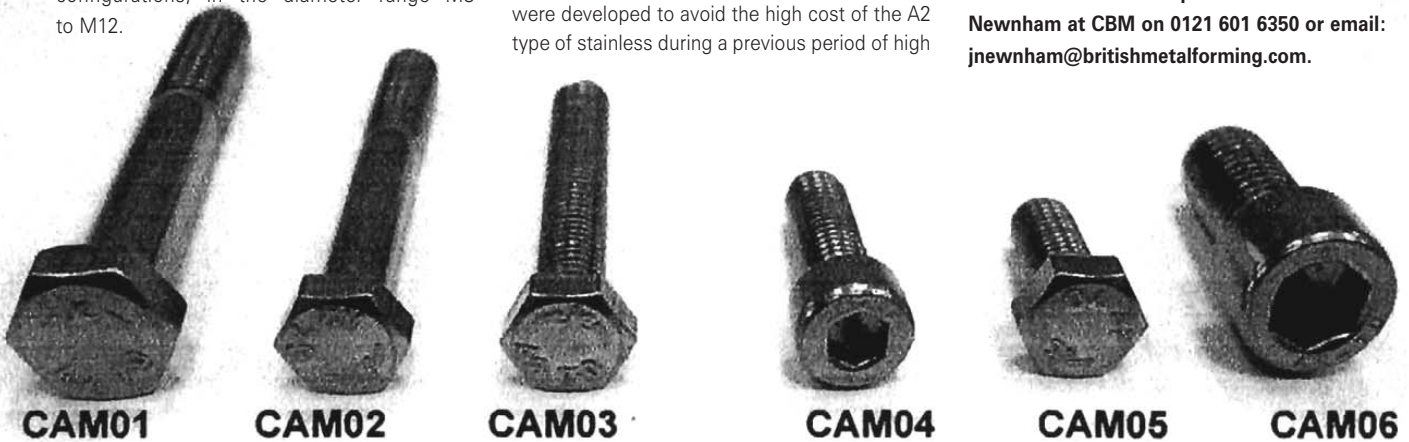


Head marking of one of the parts

nickel prices. However, these reduced cost steels also have considerably reduced corrosion resistance, and they have not been very popular for that reason.

Obviously, sub-standard stainless steels have been used in the manufacture of these fasteners, which clearly do not comply with the standards inferred by their head markings. The importers of these bolts need to be aware of their liabilities in case of product failure, and buyers need to be on their guard for such fraudulent products.

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Samples of sub standard bolts found by EIFI

fasteners