Why use "Better" drywall screws?

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Cheap headline prices might look attractive but are they always as good as they seem? Drywall screws demonstrate the old adage that "you get what you pay for". Price advantage can be achieved by sacrificing performance but does this constitute a real saving for the installer? I strongly suggest that the "better" fastener should represent the preferred option for both distributors and end-users.

Benefits of premium product

Premium sharp point drywall screws should drill through 1mm of steel in less than 0.7 seconds. This can obviate the need for more expensive self-drilling screws, and will save operator time and effort thus increasing productivity and thereby reducing labour costs.

The core requirement of an end user is that his fasteners work. He requires screws that drill without heads snapping. The "Better" drywall screw offers a consistent level of mechanical performance with minimal wastage. Each fixing should work and the "screw on the floor syndrome" should be eliminated.

Properly applied plating is essential to mitigate the risk of corrosion, within the tolerance of the particular coating used. The use of premium product will militate against the risk of rust.

Drywall screws should be of consistent dimensions. The "better" drywall screw will offer this. Recesses should be formed to ensure that insert bits are tightly engaged on a "Stick-fix" basis thus improving usability of the fixing.

The elimination of swarf and contamination is essential as a contribution to a safer working environment. The use of premium product will eliminate this risk. The strong packaging associated with quality screws will protect against burst boxes and wastage, thus improving overall cost of effectiveness.

The "better" drywall screw will increase customer satisfaction at all levels and should eliminate costly complaints and returns.

Key characteristics of a "better" sharp point fine thread drywall screw

Screws should be sharp, but not excessively so. An angle of between 23 and 25 degrees offers consistent penetration performance. They should have 18 threads per inch with a thread diameter of 3.6mm. The heads should be concentric with a diameter of approximately 8.2mm, and a minimum recess depth of 2.6mm. Other dimensions must conform to strict tolerances.

Surface hardness should be a minimum of 650 HV whilst core hardness of at least 380 HV is recommended. Hardness is a key factor as regards to the penetration capabilities and speed of the screw. Breaking torque strength should be at a minimum of 32Kg /Cm to mitigate the risk of head snap.

The screws should be plated with either zinc 3 micron or a 48 hour phosphate coating, sorted to eliminate swarf and impurities, and packed in strong boxes. They should be palletised on properly formed and protected solid wood pallets to ensure safe warehouse handling.

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Issues relating to manufacture

In achieving the characteristics listed above various matters must be addressed. Arguably the most important is the quality of the raw material used. C1022 and C1018 wire rod are the most commonly used base materials, however precise chemical composition of the wire rod varies from factory to factory and hence ultimate performance of screws will vary according to the precise source of the raw material. Likewise the quality of the annealing process will affect the finished product.

The quality of the heading and threading machines used in the manufacture of the screws obviously impacts on the production of the screws. The use of modern machinery featuring good heat resistance and tight tolerances is crucial. As important a factor is the precision of the moulds and their length of use. Moulds should be changed frequently as the longer the moulds are used the greater the potential for inconsistencies in production. However this does carry significant cost implications.

Irrespective of the raw material and machinery, properly trained machine operators and engineers play an essential part in ensuring the production of the "better" drywall screw. A positive quality control philosophy is requisite and needs to be in place at every stage of the production.

The use of modern heat treatment plant with precise temperature control will directly impact on the hardness, and hence performance, of the finished product. Additionally specialist techniques are required for treating long length screws to ensure dimensional stability.

The most common coating used for drywall screws in the UK is Chrome 6, 3 micron coating. This only offers limited corrosion resistance, but is a very stable coating. However a chrome 3, or indeed chrome free coating should be preferred to minimise damage to our environment. Alternatively a 48 hour salt spray resistant phosphate coating is available but this coating can react with certain compounds used in construction.

Sorting of product is vital to eliminate swarf and impurities. Excessive oil should be removed and a final quality check be made prior to packaging the final product, which should be packed in strong boxes to avoid damage and wastage.

Conclusion

Whilst the "better" drywall screw is certainly more difficult and expensive to produce it offers distributors increased customer satisfaction and delivers cost savings to the installers by increasing speed of operation and reduction of wastage.