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Opening new doors

Andy Sumner, Senior Technical Consultant, BM TRADA Certification Ltd, discusses the company's new third-party Q-Mark certification scheme for doorsets to prove lifetime performance.

In today's market, demands for guarantees of overall fitness for purpose are increasing. No longer is it enough for a doorset simply to work at building handover. The contractor and owner want evidence that it will continue to perform well into the warranty period of the building and beyond.

Depending on their location and application, doors must withstand varying levels of traffic and abuse. A door in a cross-corridor of a school, for example, is subject to heavy traffic and frequent abuse, while a classroom door in the same school must withstand the same type of treatment at the hands of pupils, but less frequently. The entrance door to a large office block sees a lot of traffic, but is generally subjected to lower levels of abuse by office workers than pupils will inflict in schools, while a door to an individual office is likely to have infrequent traffic and little abuse.

Manufacturers and facilities managers have to consider such factors when trying to identify the performance levels required of the doors they are producing or specifying. Without a reliable means of comparison, this can lead to doors being selected which are less durable than they need to be. Price is not the best differentiator of performance.

BM TRADA developed its third-party Q-Mark certification scheme for the lifetime performance of hinged and pivot doorsets in response to growing demand from facilities managers and other specifiers. The scheme is deliberately 'heavyweight' in terms of the performance criteria demanded – it is based on sister company Chiltern Dynamics' highly successful *Classification for Service Life Test Programme* CDTM01.

There was demand, too, for third-party certification from some manufacturers who had passed the test programme. The test evidence had already secured them contracts that they

might not otherwise have won, especially those targeting hospitals, where durability is a key issue. However, while testing demonstrates that one individual product is able to meet certain requirements, third-party certification provides the assurance that all doorsets coming from the production line would be made to the same specification as that originally tested. As such, certification such as the Q-Mark gives manufacturers a major competitive advantage and is an invaluable yardstick for the specifier. BM TRADA Q-Mark schemes are acknowledged to set high standards, not just for individual products, but also for the market as a whole – and while specifiers are often driven by price, certification enables manufacturers to offer more than simply value for money.

Scheme requirements are set to provide enhanced performance of the product. Legislative requirements must be met, but durability and standards of workmanship are set at a higher than average level. Scheme membership is based solely on meeting technical requirements and specifiers can be confident that only suppliers who have met BM TRADA's stringent standards have been awarded certification.

Over the years working closely with industry, Chiltern Dynamics has developed and refined the CDTM01 test programme to ensure that testing fully represents the end use environment and the new Q-Mark scheme reflects that. It incorporates the most demanding elements from a number of British and European standards, including DD 171 Guide to specifying performance requirements for hinged or pivoted doors; BS EN 1191 Windows and doors – resistance to repeated opening and closing – test method; BS EN 1192 Doors – classification of strength requirements; and BS EN 12046-2 Operating forces – Test method – doors.

Based on their performance under testing, doors can then be classified against BS EN 12400: Windows and doors – Mechanical durability – Requirements and classification .The classification is expressed as a category of duty. The test programme covers a whole range of criteria, including:

- Vertical load
- Static Torsion
- Soft and heavy impact
- Hard body impact
- Slamming shut
- Slamming open
- Closure against obstruction

- Resistance to jarring and vibration
- Abusive force on handles
- Operating forces
- Cycling - between 250,000 and 1 million opening and closing cycles tested depending on duty classification – as an indication of service life.

The relevant end-use application is based on Chiltern Dynamics' research, site surveys and published figures for typical number of operations for doors installed in specific locations. The requirements for each test reflects the doorset's intended severity of duty, eg a large office building entrance doorset completes more than 900,000 operations each year, doors in school corridors 100,000 operations or more and dwelling entrances greater than 5,000 operations. Similar variations exist for strength and dimensional demands and these are reflected in the test programme requirements.

The 'Severe duty' classification represents what the standards refer to as the 'frequent violent usage' doorsets may undergo in a busy school or hospital environment, for example – and in response to feedback from industry, Chiltern Dynamics can now add a 'Very severe' classification to the programme if additional testing is carried out, for example applying higher forces or increasing the severity of testing, as applicable.

Where doorsets are required to perform additional functions, such as fire resistance or security, added assurance can be provided by specifying additional certification for these characteristics, ensuring that all of the applicable scopes of certification cover the specification to be tested.

How does the Enhanced lifetime performance scheme work?

All Q-Mark schemes require the manufacturer to have in place a Quality Management System, ideally under certification to ISO 9001:2000 or similar. This system will be audited as part of the enhanced lifetime performance scheme. Furthermore, scheme members must provide test evidence to the appropriate classifications within CDTM01 for each doorset type covered.

Audit testing is the ultimate differentiator of the Q-Mark scheme compared with some others. Initial type testing proves only that, on the day, one product has met the requirements. Audit

testing means that any product selected from the production line must pass the same requirements.

A nominated person in the member's organisation who will be responsible for looking after the Q-Mark enhanced lifetime performance scheme, which also requires:

- Controlled documented procedures defining the critical areas of doorset manufacture and assembly, including customer requirements, work instructions, traceability and quality control.
- Training records to be kept for those people directly involved with the process of manufacturing certified products.
- A process to record customer feedback.
- Installation/ maintenance instructions to ensure that the finished product is installed and functions as it was designed to be used.

When companies apply to join the scheme, BM TRADA will carry out an initial audit at the company premises to review procedures, processes and the products that are to be included within the scope of certification. Once the auditor has verified that all the scheme requirements have been met, the member will then be issued with a Q-Mark certificate and their details entered onto the BM TRADA website.

Surveillance audit visits will be conducted each year to ensure that the member is correctly fulfilling the requirements of the scheme and that each certified product is still being manufactured to the defined procedures.

Doorsets which have achieved the Q-Mark for Enhanced lifetime performance will also be well placed to enter the wider European market. The Construction Products Directive (CPD) considers the requirements for durability of products, demonstrated by testing an 'as built' doorset. Cyclic testing of doorsets is used as a mechanism to demonstrate durability along with other performance tests, to comply with national regulatory requirements, compliance with the CPD and ultimately achieving CE marking.

- For more information email sbeer@bmrada.com. A Technical Information Sheet T1-0811 *Classification for service life* is also available. For a free copy email epeters@chilternfire.co.uk

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