

DELIVERING THE ENVELOPE

The roof and wall envelope of metal clad industrial and commercial buildings have to perform a number of important functions to ensure, or sometimes guarantee, that the building meets its design parameters. Individual components within proprietary systems have a set of key attributes which enable them to function in the manner in which they were intended to and also operate collectively to ensure that the complete system performs to the highest standard.



Courtesy of Ash & Lacy Building Systems

The attributes of the roof and wall provide shelter, insulation, durability, structural stability and structural strength, combined with aesthetics and intrinsic value for the building owner and in many cases the tenant. During the design stage the designer, architect or design and build contractor has to assimilate all of the parameters to provide a fully functional and useable building.

As part of this process the design team will also consider how individual components meet with the overall needs and also how individual components interact or react with each other. It is this part of the design process which integrates individual components and systems into a workable and purposeful solution. To enable this to happen and to provide the correct solution the design team must have a complete understanding of the building's needs and the specifications for the products and systems that are available. This stage requires a holistic approach and design decisions cannot be taken in isolation.

Manufacturers' technical data and in-house technical support teams can make this part of the process a lot easier. Their specialist knowledge about their products and systems can provide the guidance which is needed to make both a positive recommendation or in some cases highlight a problem which needs further investigation. Without this level of support and specialist advice wrong decisions can sometime be made with disastrous results.

During this difficult economic climate budgets are under extreme pressure and scrutiny. This is another important attribute of the specification process as trying to achieve cost savings to comply with a tight budget can have a major negative influence on the specification of the right product for the application. This is particularly so when products are chosen without having full knowledge of all the parameters or without due consideration for the holistic requirements of the building.

Budgetary restraints during or after the initial design stage, can also have an adverse effect on the performance of the building, the durability of the chosen systems or the suitability and compatibility of component parts. Cost is obviously an important element when choosing products but the specification of low cost and/or inferior products should not be a factor for debate.



Courtesy of Tata Steel

The inclusion of component parts with incompatible or inappropriate specifications can also lead to premature failure. In the past there has been little or no real check on the specification of products other than the fact that they may have to conform to a national or international product standard.

From the 1st July 2013 products manufactured or offered for sale by agents within the UK will have to comply with the Construction Products Regulations (CPR) and additionally they may be required to be CE Marked.

The scope of the CPR is limited to regulated issues under seven basic requirements for construction works:

1. Mechanical resistance and stability.
2. Safety in case of fire.
3. Hygiene, health and the environment.
4. Safety and accessibility in use.
5. Protection against noise.
6. Energy economy and heat retention.
7. Sustainable use of natural resources

CE marking is mandatory for products which are covered by a European harmonised standard or a Common Understanding and Assessment Procedure (CUAP). Most if not all products such as metal cladding, fasteners, insulation and support systems together with structural frame work will need to comply with the requirements of CE Marking. Profiled cladding will be required to conform to BS EN 14782 and composite panels will require CE marking to BS EN 14509. The introduction of CPR and CE marking should not affect cost but will undoubtedly raise the level of product specification for both new and refurbishment projects.

Further heightening of correct product specification will be introduced through the Government's construction strategy, which is set to drive level 2 Building Information Modelling (BIM) in public sector projects by 2016. The introduction of BIM into the design stage will enable all members of the supply chain to work collaboratively through the access and sharing of information about components, systems and their in-service use. The availability and sharing of information across the design team should have a marked effect on reducing costs and avoiding costly mistakes.

Companies within the Metal Cladding & Roofing Manufacturers Association provide backing for BIM-based design projects and provide expert advice about the specification of CE marked products. In support of these activities the independent Consultants Group provide professional advice about the building envelope during the design, assembly and operating phase of construction.



Courtesy of SpeedDeck Building Systems Limited

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