



## SOUNDPROOFING 42 STOREYS OF THE SHARD'S SHANGRI-LA HOTEL

► Distinctive, unconventional and controversial, the Shard is undoubtedly the work of a visionary...



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► Renzo Piano, the Shard's architect, which is currently the tallest building in the EU, is no stranger to controversy, having designed buildings like the Pompidou Centre in Paris, with its exposed pipes, ducts and cabling. It's unsurprising that Piano has an expanding collection of architectural awards, including the Royal Gold Prize, the AIA Gold Medal, the Pritzker Architectural Prize, and the Sonning Prize, recognising his broader contribution to Europe's cultural life. But for every architectural visionary there are whole armies of technicians and tradespeople striving to turn the architect's vision into a practical reality.

When CMS Danskin Acoustics was engaged to ensure the Shangri-La Hotel's 42 floors in the Shard were effectively soundproofed, it wasn't a straightforward assignment. From the first sketches drawn on a napkin by Piano during dinner with property developer Irvine Sellar, the Shard was always intended to be 'all about the windows', with wide façades of angled glass reflecting sunlight and the sky to create 360° views of the city.

Unfortunately, when the glazing is central to the design, floors can get in the way of the overall effect, and the temptation is to minimise floor heights. This presents a significant challenge to acoustic insulation installers. In short, the thinner the floor, the harder the soundproofing material has to work acoustically and the more physical punishment it endures.

For approximately 70% of the floors, Flowcrete UK's Isocrete Self Level Renovation screed was applied at a 40mm minimum thickness. The screed was pumped from ground level, with the largest pour in excess of 80m<sup>3</sup> covering an area of 1,680 m<sup>2</sup>. In approximately 30% of the floor areas however, the floor screeding level could not be raised because of the existing floor-level transom in the curtain walling. This meant that there were instances of screed thicknesses of approximately 25 mm in places.

CMS Danskin's Regupol E48 was specified, a Robust Detail approved (E-FC-6) high-performance screed isolation material. E48 was perfect for those 'thin screed' areas, with its maximum load bearing capacity of 3000kg/m<sup>3</sup> (30kN/m<sup>2</sup>), combined with a mean average impact sound insulation performance of 46dB and a mean average airborne sound insulation performance of 49dB, both values well in excess of the requirements of Part E of the Building Regulations.

Building Regulations aside, E48's 'overperformance' is crucial for a hotel as exclusive as the Shangri-La. The award-winning, globespanning hotel group prides itself on providing a customer-focused experience, with the emphasis very much on luxury. Intrusive noise from above or below a guest's accommodation would almost certainly undermine those efforts. Plus, with this being a flagship project for the Shangri-La - their first hotel in Europe - 'fit for purpose' simply wasn't an option.

As a Robust Detail underscreed, E48 has already been rigorously pre-tested to ensure it achieves a minimum performance of 5dB over and above Part E, thus eliminating the need for PreCompletion Testing. However CMS Danskin and the screed applicator team, Progressive Group, preferred to adopt a partnership approach, with the emphasis on planning and testing, giving absolute certainty to all parties and making full use of all the skills, expertise and experience at their disposal.

More than 16,000 m<sup>2</sup> of E48 was installed over approximately three months, with the flooring partners maintaining a close working relationship throughout.

Tony Cooney, Estimating Manager at Progressive Group, said: "The completion of the screed and insulation work on the Shangri-La Hotel development was a fantastic achievement and it presented a number of very challenging situations - both technical and logistical. Solutions to these challenging situations are achieved by the co-operation of all parties involved - including material suppliers." ■



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