

WITNESS STATEMENT

Criminal Procedure Rules, r27.2; Criminal Justice Act 1967, s.9; Magistrates' Courts Act 1980, s.5b

Statement of: GARRATT, MARK

Age if under 18: (if over 18 insert 'over 18')

Occupation: QUALITY INSPECTOR

This statement (consisting of 5 page(s) each signed by me) is true to the best of my knowledge and belief and I make it knowing that, if it is tendered in evidence, I shall be liable to prosecution if I have wilfully stated in it anything which I know to be false, or do not believe to be true.

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Date: 23/08/2018

Tick if witness evidence is visually recorded ☐ (supply witness details on rear)

This statement refers to my knowledge relating to FD30 firedoors, COMPOSITE firedoors, and touches upon part of my time working for the companies MANSE MASTERDOR (who I shall refer to as MASTERDOR), and THERMATRU.

I qualified as an Industrial Design Engineer at TEESIDE POLYTECHNIC in 1985, attaining a 1st class BA (Hons) degree in Engineering. My tenure at MASTERDOR started in 1998 and I worked for them as a Technical Sales Manager until November 2004. One of my colleagues there was a man called Mike HUDSON (who is probably now retired), and I shall make reference to him in my statement.

After leaving MASTERDOR in 1998, I started working for an American owned door set manufacturer called THERMATRU, and during my time with them I was based in SOUTH WALES. I stayed with them until 2006 when because of the financial crisis, the company dissolved. I am currently employed as a quality inspection engineer by an automotive company.

MASTERDOR started as MANSE MASTERDOR, but after they went into liquidation they were purchased by a company called LB PLASTICS, (based in SPANKER LANE WORKS, DERBYSHIRE), and from then they were known as just MASTERDOR. After I left MASTERDOR, the entire LB group

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were purchased by SYNCEL, and as far as I am aware they are the current owners of MASTERDOR.

During my time working for MASTERDOR, they made very high quality firedoor products and their extensive testing meant that the doors performed to an extremely high standard. I would happily say that the company was very proud of producing these products and knew that they were reliable.

MASTERDOR's output was based around supplying to the social housing industry; we did very little domestic work as it was far too expensive. We would make everything to a very high quality for a social housing stock such as in WAKEFIELD, and we would make 1000 door sets a week. This was the same when I worked for THERMATRU, where we'd provide stock for LONDON boroughs (such as the social housing centres in GOLDSBOROUGH GREEN), where they'd buy 6000 doors.

The processes both of these companies used was called 'Flexible Manufacturing', where new doors were custom designed for individual flats. This wasn't like a production line that makes one type of door, but each was made to the specification of the customer (e.g. they could choose the colour, letter plate, knocker, glass pattern), all measured by surveyors and guys with tape measures. Each might be wider, taller, bigger, smaller, but everything was proportioned to fit. Consequently the frame would fit exactly on the door blade with the exact 3mm gap all the way round. This changed though when the budgets for social housing came apart at the end of 2006 -2007. As a result, there was no market for either company as it wouldn't be cost effective to reduce the amount of doorsets.

I have been asked by DC WRIGHT to give some account regarding the way that an FD30 firedoor is made and performs. From my experience in this area of work, these doors were manufactured as a complete system or engineered product rather than a conventional joinery manufactured door, so that the front door was built as a tailor made frame, door blade and associated hardware.

The product was delivered to the customer as a pre-hung door blade in an engineered frame, and in the ones MASTERDOR used it was an aluminium frame with timber capping to the inner and outer of the frames, with the door frame itself manufactured from engineered timber.

Engineered timber door leaf is like plywood or particle board and is timber that's been cut into very small slices, turned around, made into slabs and glued together; it's an engineered product and so is very stable.

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These doors therefore do not warp, bend, are extremely fire resistant, and you don't have the problems that you have with traditional doors.

The door slabs themselves are sold by a German company and are designed to work in excess of 30 minutes fire resistance, and they do. They are sold all over Europe.

To test the FD30 doors, the doorset / frame or its associated hardware, would be placed in a fixed sized aperture in front of a furnace. There should be no leaks around the aperture where the frame fits into the furnace, so that the door itself acts as a front door to the furnace. The inside is then lit, (it's a gas furnace as far as I recall), to a very high temperature, and has to be left and observed for the appropriate time. A failure is noted if any form of gasses escape from around the door through the door hardware, such as a letter plate, (which are usually given the incorrect term of 'letter boxes'), or through any glass or glazing aperture on the door. If that happened then immediately that is a failure. For it not to fail it has to survive 30 minutes.

You only need to provide a number of representative samples of the door for testing, much in the way that the security of doors is tested to a principle called 'Pass 23 and 24' (which I was heavily involved with as well). A number of patterns or styles of the door were tested and by association the rest are assumed to be correct. Specialists will assume that a certain characteristic hasn't been altered in a way that would cause any critical failure.

The frequency of the testing was dependent upon whether any specifications of the door were changed; if they weren't then that was it and no further testing was required. When I worked for MASTERDOR if there was ever any change to the door design, be it a different glass pattern, aperture, lock etc., then I would refer my modifications to a Police flagship organisation called Secured by Design, who we had an excellent working relationship with, and who were always very helpful. Their job was to assess the modifications and determine whether they were acceptable or whether I'd have to have the product retested.

I recall from my time working at MASTERDOR, that I was asked by the Sales Director, Mike HUDSON, to investigate what would be required to upgrade our existing engineered timber blade FD30 fire door

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product, to an FD60. This would have a 60 minute fire resistance performance. After discussing the performance of the existing design, specifically the way in which the blade easily surpassed the FD30 test requirements, I decided to reinforce the existing extruded aluminium door frame by inserting lengths of hollow square section mild steel tubing into the main hollow of the extrusions. This acted as both a heat sink, drawing heat from the aluminium, and as a stabiliser, preventing bending under heating. The standard FD30 door blade, if I recall correctly, was also painted with intumescent paint on the fire risk face.

This design was subjected to indicative (not fully accredited BSI testing), at the facilities of ENVIROGRAF (they were a fire protection specialist company), who supplied the intumescent materials used in our production facility, where it exceeded the 60 minute fire exposure test. ENVIROGRAPH are based at ENVIROGRAF HOUSE, BARFRESTONE, DOVER, KENT, CT15 7JG.

I wrote a document earlier in 2018 entitled 'FD30 FIREDOOR DOORSET BRIEFING NOTES', which gives some idea of the purpose and construction of the FD30 door, and I have been asked by DC WRIGHT to expand on this further. (I have given this document to DC WRIGHT, exhibit MKG/01).

The main construction of the FD30 fire door is an outer frame made from a temperature resistant material normally likely to be aluminium or steel (as I have mentioned, in the case of MASTERDOR they were aluminium). The door blade may or may not have a glazed aperture in it, and if it has then the glass itself has to be rated for fire resistance; there's a number of different types available on the market, all independently tested and can be used, and with application advice from the supplier can say effectively they are going to work in the intended context

The hardware fits to the door and hinges have to be the type of material that won't fail under extreme heat conditions; in the case of MASTERDOR when I worked there, they used steel. If there are hardware handles these are likely to be considered less important because they're likely to melt and drop off anyway; they're basically considered as wastage. Things like letter plates have to be dealt with because that's a big hole through a door. What happens is you'll have a letter plate or sleeved device that fits in

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over a hole that's cut into the door, looks like a top hat section, and the two halves fit perfectly together. This is surrounded by a very strong intumescent strip or tape. What happens then in the way they're designed is the letter plate itself will melt; in practice it will melt and drop off the back of the door that's facing the fire. The intumescent at that point will expand like expanding foam and fill the hole where the plate was located and fell off.

Other intumescent areas very importantly line the aperture between the door frame and the door slab or door blade. They can be incorporated into the grooves in the door blade, which is the common way of producing these in manufacturing. When I worked for MASTERDOR we put the intumescent as a lining on the face of the frame adjacent to the frame itself. This is a vital part of the product, and once again, when heat is presented to the door blade the intumescent expands rapidly and seals the whole thing together, effectively as a solid lump that stops gasses getting through.

Where there is glazing that is fitted into the hole, then a clamp is used to hold the glass into the door, and this is also lined with intumescent so if it becomes dislodged due to a fire the intumescent will continue to hold the glass in place inside the door.

The doors probably cost in the region of £500 - £600 per door set, but that was long ago and is a fairly tenuous figure; and negotiation regarding costs wasn't down to me but to the sales department.

In comparison with the FD30 fire door is the COMPOSITE fire door. The frame for this could quite happily remain the same specification as previously stated, and it's the door blade itself that's the composite. The nature of a Composite door blade is simply described as a frame to provide the outer shape of the door, a silhouette, with the door skins of nominal material placed either side of it, and in some cases these can be steel or pressed steel. Nominally a lot of the time they're composite fibre glass material and the inside is filled with an expanding foam. The chemistry obviously does exist to now make a Composite fire door because I've seen tests in the press that a company in the last couple of years has come up with what they consider to be a very good Composite fire door, but I don't know what materials would have been used.

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If I were to compare a FD30 to a Composite firedoor I'd have to make a fair amount of assumption that a Composite door would have to be independently tested by somebody prior to offering it on sale to any other company. People like MASTERDOR wouldn't make a Composite door, they didn't have the technology or machinery to do that; they would buy that in as a pre-finished item from somebody else. They were more of a wood product company and had a different culture in terms of manufacturing.

After I left MASTERDOR I was aware that they started to use Composite doors instead of the ones I have described, although I don't know what type of blade they used. It would have been a joint decision of Mike HUDSON, and the owning company, as mentioned, LB PLASTICS. I'd have said that decision would definitely have been to cost the thing down because the timber firedoor was an expensive product; they would certainly have been looking for cost savings on that one as I can't think of any other earthly reason why you'd do it.

The issue of Composite firedoors was something occasionally discussed when I worked for THERMATRU, where we had a very large research and development department in Edgerton ILLINOIS. I visited that department several times during my time with the company, and we frequently spoke about the possibility of making a Composite firedoor, but the general opinion was that it was too risky and we weren't going to do it. The potential market in the UK was enormous but it didn't outbalance the potential failure level. Admittedly the Americans tend to be somewhat risk averse to start with, but everyone just backed off and didn't think the technology was good enough.

After leaving MASTERDOR I recall briefly speaking with Mike HUDSON. It was during the time when THERMATRU were wrapping up, so the best I can offer is that it's got to be some time at the end of 2006, early 2007. WE had a bit of a crossover with our work at the time. I was involved with a project concerning door security and I had started a small firm of my own that looked into preventing a practice that was going on called 'lock bumping'. People would open a Yale lock (you could get a 6 yr. old to do it), in about 13 seconds. I found a way to develop a means to stop it and MASTERDOR were interested because we'd all fitted these doors and we'd suddenly find that people could breaking into them — so that was it — Mike and I had a bit of a conversation about that and he wished me luck in what I was doing, and then he mentioned that they had got a Composite firedoor which they were extremely pleased

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with because it was cheaper and involved less effort in manufacture. I recall saying at the time that I wouldn't have been comfortable with such a product, and my comment was 'Best of luck to you guys, I don't think that's the best thing you've ever done!' It was a brief conversation. There's really no more I can add to that and that was the last time I spoke with him.

I didn't think it was a good idea because my knowledge of Composite doors at the time, which had been greatly accelerated by my tenure at THERMATRU, meant that I didn't think you could reliably make a Composite fire door; there were far too many risk elements involved.

It was the experience of my time with MASTERDOR and knowing the high standard of product they produced that led me to contact Police after reading an article in 'The Times' newspaper regarding the GRENfell TOWER fire. I was alarmed when I read the reference to MASTERDOR products failing during their exposure to this fire. I felt absolute horror and disappointment about a company I was proud of — we were the best of the best.

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