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From: Steve Evans
Sent: 30 October 2014 15:01
To: Elaine Taylor
Cc: Graham Perrior; Dave White; John Lewis
Subject: FW: Fire performance of PUR and PIR thermoset rigid insulation boards in building envelopes >18m

Hi Elaine

Can you liaise with Jamie below and Sadie in S&T to arrange a meeting please:

Meeting will involve

- Me
- Graham Perrior
- Dave White
- John Lewis
- Diane Marshall (if diary allows)
- Ian Davis (if diary allows)
- Mark Jones (if diary allows)
- Barbara Lane from ARUP (Jamie is her PA below)
- Representatives from BRE (Dave White to confirm contact details)

Don't mind where the meeting is to be held although we have suggested BRE offices in Watford. Meeting needs to be held as soon as possible and in terms of my diary there isn't a lot that can't be moved for this meeting, possibly only the Annual lunch and the Homebond conference the day after.

Regards

Steve Evans

Senior Area Technical Manager

Technical Services Department

Direct tel: [REDACTED]

Mobile: [REDACTED] | email: sevans@nhbc.co.uk

NHBC | NHBC House | Davy Avenue | Knowlhill | Milton Keynes | MK5 8FP

www.nhbc.co.uk | Tel: [REDACTED] | Fax [REDACTED]

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From: Jamie Lee [<mailto:Jamie.Lee@arup.com>]
Sent: 30 October 2014 13:39
To: Steve Evans
Subject: RE: Fire performance of PUR and PIR thermoset rigid insulation boards in building envelopes >18m

Hi Steve

Thank you for your email.

Would you like to send me your availability;

w/c 10th Nov
21st November
w/c 24th

Barbara

Sent from my BlackBerry 10 smartphone.

From: Steve Evans
Sent: Thursday, 30 October 2014 11:48
To: Barbara Lane
Cc: Graham Perrior; John Lewis; Dave White
Subject: Fire performance of PUR and PIR thermoset rigid insulation boards in building envelopes >18m

Dear Barbara

Further to my telephone message left earlier today, I am writing to request a meeting with you to discuss technical issues of concern to NHBC involving residential high-rise apartment blocks where combustible materials form part of the external façade and/or the wall build-up for insulated framed building structures. The meeting would also be attended by BRE to reflect on current testing. It might help if I outline some of our main concerns below.

- **In looking at key aspects of design to maintain acceptable levels of fire safety over the expected life of residential buildings** we have over the past months reviewed potential fire risk where combustible construction materials are installed within external walling envelopes of drained and ventilated rain screen facades. In focusing on an evaluation of true performance the materials of greatest concern include PUR / PIR thermoset rigid polyurethane board products which are promoted by manufacturers for extensive use in external envelopes of multi-storey buildings exceeding 18m high.
- **In accordance with our technical standards and Building Regulations AD-B compliance**, NHBC has regularly requested that fire performance should be proven by testing under the BS 8414 and BR135 requirements for high rise buildings exceeding 18metres. This has resulted in a greater number of these fire tests being commissioned by manufacturers in attempting to prove performance of their insulation products on facades >18m. However, the results from this type testing does not always confirm the safe levels of performance that are hoped for.
- **When reviewing the full test reports NHBC looks at holistic performance rather than just temperature values i.e. as measured within the wall build-up.** Wherever we have seen significant damage and fire spread within these prototype façades this has been raised with the manufacturer in terms of the actual wall design and fitness for purpose relating to fire performance.
- **However the tendency is for manufacturer's to focus almost exclusively on the temperature threshold values as they consider this data to represent a full 'pass' condition regardless of other reported fire actions** including the actual mechanism of fire spread observed. Discussions on these issues have not resulted in agreement being reached between NHBC and Manufacturer's on a scope of design application where particular insulation products will be accepted for future use on buildings >18m. that are registered for NHBC Warranty.
- **We have suggested that Manufacturer's should seriously consider appointing a Fire Engineering Consultant to qualify any limitations of use for insulation products** either by way of a generic product type study or for particular building project design specifications. To date, this approach has not been taken up by any Manufacturers unless specifically demanded by the principal client or developer of a building scheme.

An internal meeting was held recently involving NHBC Heads of Department responsible for Building Control and Building Standards including NHBC Standards & Technical. We agreed that our next course of action should be to hold initial discussions with recognised fire experts whereby issues of concern could be considered without prejudice on a purely technical basis in relation to current knowledge - including Building Regulations and existing standards on fire performance.

We would greatly value your input and the recognised ARUP expertise concerning this particular issue. Hopefully, it can help NHBC in progressing towards practical clarification on what can reliably be understood from performance

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