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|  | Operational Procedure - Rev 0 | | NWP 01 - Rev 1 |
| | BMS 76 - Sheet Jointing Tolerances & Sheet Standard Novus Materials | | Issued by: Alan D Senior Date: 1st Jan 2010 Page: 1 of 2 |

Unless otherwise specified, the thickness of all sheet jointing, shall be manufactured in accordance with tolerances listed in Table 1 below:

Table 1

| Nominal Thickness | Maximum Variation From Nominal Thickness BS 7531 | Minimum Thickness Novus Preferred Target | Thickness Novus Acceptable Target | Thickness BS 7531 Maximum Thickness | |
|----------------------|---|---|---|---|---------|
| 0.25 mm | + 0.05 mm / - 0.05 mm | 0.20 mm | 0.25 mm | 0.27 mm | 0.30 mm |
| 0.40 mm | + 0.05 mm / - 0.05 mm | 0.35 mm | 0.40 mm | 0.42 mm | 0.45 mm |
| 0.50 mm | + 0.05 mm / - 0.05 mm | 0.45 mm | 0.50 mm | 0.52 mm | 0.55 mm |
| 0.75 mm | + 0.10 mm / - 0.10 mm | 0.65 mm | 0.75 mm | 0.79 mm | 0.85 mm |
| 1.00 mm | + 0.10 mm / - 0.10 mm | 0.90 mm | 1.00 mm | 1.05 mm | 1.10 mm |
| 1.50 mm | + 0.15 mm / - 0.15 mm | 1.35 mm | 1.50 mm | 1.60 mm | 1.65 mm |
| 2.00 mm | + 0.15 mm / - 0.15 mm | 1.85 mm | 2.00 mm | 2.10 mm | 2.15 mm |
| 2.50 mm | + 0.25 mm / - 0.25 mm | 2.25 mm | 2.50 mm | 2.60 mm | 2.75 mm |
| 3.00 mm | + 0.30 mm / - 0.30 mm | 2.70 mm | 3.00 mm | 3.15 mm | 3.30 mm |
| 4.00 mm | + 0.40 mm / - 0.40 mm | 3.60 mm | 4.00 mm | 4.20 mm | 4.40 mm |
| 5.00 mm | + 0.50 mm / - 0.50 mm | 4.50 mm | 5.00 mm | 5.30 mm | 5.50 mm |
| 6.00 mm | + 0.60 mm / - 0.60 mm | 5.40 mm | 6.00 mm | 6.40 mm | 6.60 mm |
| 7.00 mm | + 0.70 mm / - 0.70 mm | 6.30 mm | 7.00 mm | 7.50 mm | 7.70 mm |
| 8.00 mm | + 0.80 mm / - 0.80 mm | 7.20 mm | 8.00 mm | 8.50 mm | 8.80 mm |

As no dimensional tolerances are specified in BS 7531 for the manufacture of sheet jointing material the following internal tolerances shall apply for Length & Width of Sheet:

$$+ / - 2\%$$

This tolerance shall apply to all sheet sizes, with no deviation.


NOTE: Where non-standard thickness is specified, the following tolerances shall apply;

Thickness up to and including 0.50mm shall be + / - 0.05mm

Thickness above 0.50mm shall be + / - 10%

Permissible deviation of the sheet thickness shall be in accordance with the tolerances listed in table 2 below:

Table 2

| | | | |
|---|--|--|--|
|  | Operational Procedure - Rev 0 | | NWP 01 - Rev 1 |
| | BMS 76 - Sheet Jointing Tolerances & Sheet Standard Novus Materials | | Issued by: Alan D Senior Date: 1st Jan 2010 Page: 2 of 2 |

| TOLERANCE FOR THICKNESS OF SHEET | | |
|---|--|---|
| Nominal Thickness Of Sheet mm | Maximum Permissible Variation From Nominal Thickness mm | Maximum Permissible Variation In Thickness Between Points Not More Than 250mm Apart mm |
| 0.25 and 0.5 | + / - 0.05 | 0.05 |
| 0.75 and 1.00 | + / - 0.10 | 0.10 |
| 1.50 and 2.00 | + / - 0.15 | 0.10 |

The above tolerances are in accordance with BS 7531 and shall apply for all sheet material up to and including 2.00mm. Material over 2.00 mm thick, shall have a maximum variation of 0.20mm in accordance with DIN 28091 / 1.

Sheet Acceptability Criteria:

Inspection Standard-
(Product Attributes - 100% Inspection)

Pickoff -
One area 4" x 4" will be permitted per sheet, provided that no individual pickoff is larger than 1" in width. Inspectors discretion involving the face being removed will be considered.

Foreign Matter -
No foreign matter will be accepted.

Pock Marks -
Defined as small, shallow craters in smooth surface of sheet caused by unacceptable process conditions. No more than 5 pock marks per sheet will be accepted, with no pock mark exceeding 1/4" in diameter.

Rough Backs -
Material is to be rejected when the back of the sheet becomes uneven.

Tears -
One tear a maximum of 1" long on the width and length will be considered acceptable.

Holes -
No holes of any size will be acceptable.

Delamination -
Defined as thickness separation between starter and regular sheet stock. Only allowed within 1" of the edge of sheet.

Blisters -
Defined as a bubbly area that has internal separation within the sheet - usually caused by entrapment of solvent. No blisters larger than 1/2" diameter and no more than 5 blisters per sheet will be acceptable.

Cracks -
No cracks in material are acceptable.