Table 51.1. Materials tested.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fabrics** | | | | | | |
| Type | Light microscopy | | | | | |
| 10X | | 25X | | | |
| Open-weave washed linen fabric: 9 × 9 threads/cm2 (CTS 2297) |  | |  | | | |
| Close-weave washed linen fabric: 15 × 15 threads/cm2  (CTS 1111) |  | |  | | | |
| **Glue** | | | | | | |
| Type | Brand | Form | Bloom grade | | Viscosity | |
| Hide glue | Kremer 63010 | Pellets | 240–250 | | 80 mPA |
| **Flours** | | | | | | |
| Type | Brand | Protein content  (%) | | Wet gluten  (%) | Amylose-amylopectin ratio | |
| Fine-milled Candeal white wheat, Type 45 | El Corte Inglés | 10–11 | | 21.5 | 0.45 | |
| Fine-milled Manitoba white wheat, Type 55 | Finestra sul Cielo | 14 | | 27.3 | 0.44 | |
| Rough-milled  semiwhole wheat, Type 80 | Minoterie DOM | 10–11 | | 24.8 | 0.35 | |
| Rough-milled  semiwhole rye. Type 70 | Minoterie DOM | 7 | | — | 0.35 | |

Table 51.2. Glue-paste mixtures.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Glue-paste mixture (ratio 1:6)** | | **Lining fabric** | **Mock-up painting: primed canvas** | **Unaged samples** | **Aged samples** |
| **Glue** | **Flour** |
| 63010 Kremer | Wheat Manitoba Type 55 | Open weave linen canvas: 9 × 9 threads/cm2  (CTS 2297) | Primed linen canvas, titanium white/zinc oxide bound in oil as ground layer  (Claessens, Belgium) | WM-O-U | WM-O-A |
| Wheat Type 45 | WT55-O-U | WT55-O-A |
| Wheat Type 80 | WT80-O-U | WT80-O-A |
| Rye Type 70 | Rye-O-U | Rye-O-A |
| Wheat Manitoba Type 55 | Close weave  linen canvas: 15 × 15 threads/cm2  (CTS 1111) | WM-C-U | WM-C-A |
| Wheat Type 45 | WT55-C-U | WT55-C-A |
| Wheat Type 80 | WT80-C-U | WT80-C-A |
| Rye Type 70 | Rye-C-U | Rye-C-A |

Note: O = open, C = closed, A = aged, U = unaged.

Table 51.3. Adhesion peel tests.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Samples tested in weft direction** | | **Lining canvas** | **Average peel force (50-250 mm) (N/cm)** | **Standard deviation (N/cm)** | **Minimum force (N/cm)** | **Maximum force (N/cm)** |
| Unaged samples | Rye Type 70 | Close weave | 5.46 | 0.90 | 3.63 | 8.02 |
| Wheat Type 80 | 6.42 | 1.06 | 4.04 | 9.46 |
| Wheat Type 45 | 5.44 | 1.92 | 2.04 | 9.63 |
| Wheat Manitoba Type 55 | 7.41 | 1.50 | 3.76 | 13.35 |
| Rye Type 70 | Open weave | 7.40 | 1.86 | 4.00 | 11.69 |
| Wheat Type 80 | 8.40 | 1.72 | 4.96 | 12.94 |
| Wheat Type 45 | 2.26 | 0.39 | 1.67 | 4.17 |
| Wheat Manitoba Type 55 | 5.05 | 0.83 | 3.18 | 7.62 |
| Aged samples | Rye Type 70 | Close weave | 6.80 | 1.02 | 4.89 | 10.14 |
| Wheat Type 80 | 6.91 | 1.06 | 4.79 | 10.20 |
| Wheat Type 45 | 4.31 | 1.20 | 2.39 | 8.24 |
| Wheat Manitoba Type 55 | 9.43 | 1.27 | 6.74 | 15.34 |
| Rye Type 70 | Open weave | 5.29 | 1.47 | 3.00 | 11.34 |
| Wheat Type 80 | 5.67 | 1.06 | 3.44 | 8.62 |
| Wheat Type 45 | 2.38 | 0.33 | 1.78 | 3.46 |
| Wheat Manitoba Type 55 | 3.40 | 0.42 | 2.68 | 5.08 |

Note: Tested using ASTM D1876-01 standard; T-type specimens in Shimadzu universal testing machine, 1 kN load cell.