

Kraftliner Brown

Typical values at 50 % RH and 23 °C

| Property | Unit | Test-method | 115 | 125 | 140 | 150 | 175 | 186 | 200 | 225 | 275 | 300 |
|-----------------------|------------------|-------------|--------|------|------|------|------|--------|------|------|------|------|
| Substance | g/m ² | ISO 536 | 115 | 125 | 140 | 150 | 175 | 186 | 200 | 225 | 275 | 300 |
| Moisture content | % | on - line | ←————— | | | | 8 | —————→ | | | | |
| Thickness | µm | ISO 534 | 160 | 175 | 200 | 215 | 250 | 260 | 285 | 320 | 395 | 430 |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1230 | 1310 | 1450 | 1540 | 1720 | 1810 | 1970 | 2090 | 2400 | 2580 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 420 | 460 | 490 | 500 | 590 | 630 | 690 | 760 | 920 | 1010 |
| SCT, CD | kN/m | ISO 9895 | 2,4 | 2,6 | 2,9 | 3,1 | 3,6 | 3,9 | 4,1 | 4,6 | 5,6 | 6,0 |
| Bursting strength | kPa | ISO 2758 | 530 | 580 | 640 | 680 | 780 | 820 | 870 | 940 | 1070 | 1140 |
| Cobb ₆₀ | g/m ² | ISO 535 | ←————— | | | | 30 | —————→ | | | | |
| Porosity, Bendtsen | ml/min | ISO 5636 | ←————— | | | | 210 | —————→ | | | | |
| Roughness, Bendtsen | ml/min | ISO 8791-2 | 900 | 1000 | 1200 | 1300 | 1500 | 1500 | 1600 | 1800 | 2100 | 2200 |

Guaranteed values at 50 % RH and 23°C

We guarantee that at least 97,5 % of our measured values are equal to or better than the guaranteed values given.

For the intervals specified we guarantee that at least 97,5 % of our measured values are within the tolerance given.

Our testing equipment is calibrated to match the round robin mean value of the Stora Enso Comparative Test. (Billerud Round Robin).

| Property | Unit | Test-method | 115 | 125 | 140 | 150 | 175 | 186 | 200 | 225 | 275 | 300 |
|-----------------------|------------------|-------------|--------|------|------|------|-------------|--------|------|------|------|------|
| Substance | g/m ² | ISO 536 | 115 | 125 | 140 | 150 | 175 | 186 | 200 | 225 | 275 | 300 |
| Substance tolerance | % | ISO 536 | ←————— | | | | +/- 3 | —————→ | | | | |
| Moisture tolerance | % | on - line | ←————— | | | | 8 +/- 1 | —————→ | | | | |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1030 | 1110 | 1250 | 1350 | 1520 | 1610 | 1770 | 1890 | 2160 | 2440 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 280 | 320 | 350 | 360 | 450 | 490 | 550 | 620 | 760 | 850 |
| SCT, CD | kN/m | ISO 9895 | 2,2 | 2,3 | 2,6 | 2,8 | 3,3 | 3,5 | 3,7 | 4,2 | 5,1 | 5,5 |
| Bursting strength | kPa | ISO 2758 | 480 | 520 | 590 | 620 | 700 | 740 | 780 | 860 | 970 | 1030 |
| Scott bond | J/m ² | Tappi T 833 | ←————— | | | | 200 | —————→ | | | | |
| L*-value | | ISO 5631 | ←————— | | | | 57,0 - 64,5 | —————→ | | | | |
| a*-value | | ISO 5631 | ←————— | | | | 5,0 - 9,0 | —————→ | | | | |
| b*-value | | ISO 5631 | ←————— | | | | 20,5 - 26,0 | —————→ | | | | |

Kraftliner Brown

Kraftliner **Brown** is a two ply kraftliner.

The top ply consists of pure softwood kraft fibres.

The base ply is a mixture of softwood kraft fibres and high quality recycled fibres from corrugated board.

The recycled fibres are heat treated to kill mould fungi.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core | 10 centimetres is standard. |
| Reel width | Minimum width is 60 and maximum width is 350 centimetres. The trimmed width of the paper machines is 6,5 metres. |
| Reel diameter | 125 or 145 centimetres are the two standards. |
| Winding mode | Top side (printing side) is wound inwards. |
| Marking | Marking on both reel ends. Two labels on the belly. |
| Reel wrapping | Paper end is both glued and taped. No bands are used. Core plugs are made of wood when used. |
| Quality management system | Certified to SS-EN ISO 9001. |
| Environmental management system | Certified to SS-EN ISO 14001. |
| Sustainable forestry | In year 2006, 35 % of the wood used in kraftliner production came from FSC (Forest Stewardship Council) certified forests. This situation is expected to continue in the medium term. |

Royal 2000

Royal **2000** is a two ply kraftliner.

The top ply consists of bleached hardwood kraft fibres. The bleaching is closed (CLB) and totally chlorine free (TCF).

The base ply is a mixture of softwood kraft fibres and a small amount of high quality recycled fibres from corrugated board.

The recycled fibres are heat treated to kill mould fungi.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core | 10 centimetres is standard. |
| Reel width | Minimum width is 60 and maximum width is 350 centimetres. The trimmed width of the paper machines is 6,5 metres. |
| Reel diameter | 125 or 145 centimetres are the two standards. |
| Winding mode | Top side (printing side) is wound outwards. |
| Marking | Marking on both reel ends. Two labels on the belly. |
| Reel wrapping | Paper end is both glued and taped. No bands are used. Core plugs are made of wood when used. |
| Quality management system | Certified to SS-EN ISO 9001. |
| Environmental management system | Certified to SS-EN ISO 14001. |
| Sustainable forestry | In year 2006, 35 % of the wood used in kraftliner production came from FSC (Forest Stewardship Council) certified forests. This situation is expected to continue in the medium term. |

Coated Kraftliner (Cote Plus)

Typical values at 50 % RH and 23°C

| Property | Unit | Test-method | | | |
|-------------------------------|------------------|-------------|------|------|------|
| Substance | g/m ² | ISO 536 | 140 | 155 | 190 |
| Moisture content | % | on - line | ← | 6,5 | → |
| Thickness | µm | ISO 534 | 140 | 155 | 190 |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1250 | 1330 | 1670 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 470 | 500 | 630 |
| SCT, CD | kN/m | ISO 9895 | 3,0 | 3,3 | 4,0 |
| Bursting strength | kPa | ISO 2758 | 580 | 630 | 830 |
| Cobb ₆₀ brown side | g/m ² | ISO 535 | ← | 30 | → |
| PPS H10 | µm | ISO 8791-4 | 1,8 | 1,8 | 1,8 |
| Brightness | % ISO | ISO 2470 | ← | 83 | → |
| Gloss 75° | % | Tappi T 480 | ← | 50 | → |

Guaranteed values at 50 % RH and 23°C

We guarantee that at least 97,5 % of our measured values are equal to or better than the guaranteed values given.

For the intervals specified we guarantee that at least 97,5 % of our measured values are within the tolerance given.

Our testing equipment is calibrated to match the round robin mean value of the Stora Enso Comparative Test. (Billerud Round Robin).

| Property | Unit | Test-method | | | |
|-----------------------|------------------|-------------|------|-----------------|------|
| Substance | g/m ² | ISO 536 | 140 | 155 | 190 |
| Substance tolerance | % | ISO 536 | ← | +/- 3 | → |
| Moisture tolerance | % | on - line | ← | 6,5 +/- 1 | → |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1090 | 1170 | 1510 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 360 | 390 | 520 |
| SCT, CD | kN/m | ISO 9895 | 2,7 | 3,0 | 3,7 |
| Bursting strength | kPa | ISO 2758 | 520 | 560 | 750 |
| PPS H10 | µm | ISO 8791-4 | 2,4 | 2,4 | 2,4 |
| Scott bond | J/m ² | Tappi T 833 | ← | 200 | → |
| Brightness | % ISO | ISO 2470 | ← | 81 | → |
| L*-value | | ISO 5631 | ← | 91,7 - 92,5 | → |
| a*-value | | ISO 5631 | ← | 0,1 - 0,5 | → |
| b*-value | | ISO 5631 | ← | (-1,9) - (-0,3) | → |

Coated Kraftliner (Cote **Plus**)

Cote **Plus** is a fully coated white top kraftliner. It is a three ply product.

The top ply (the coating) is double coated with a total weight of about 20 g/m².

The middle ply consists of bleached hardwood kraft fibres. The bleaching is closed (CLB) and totally chlorine free (TCF).

The base ply is a mixture of softwood kraft fibres and a small amount of high quality recycled fibres from corrugated board.

The recycled fibres are heat treated to kill mould fungi.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core | 10 centimetres is standard. |
| Reel width | Minimum width is 60 and maximum width is 258 centimetres. |
| Reel diameter | 120 centimetres is standard. |
| Winding mode | Top side (printing side) is wound inwards. |
| Marking | Labels on reel ends and the belly. |
| Reel wrapping | Reels are wrapped. Core plugs are made of wood. |
| Quality management system | Certified to SS-EN ISO 9001. |
| Environmental management system | Certified to SS-EN ISO 14001. |
| Sustainable forestry | In year 2006, 35 % of the wood used in kraftliner production came from FSC (Forest Stewardship Council) certified forests. This situation is expected to continue in the medium term. |

Kraftliner **Mottled**

Kraftliner **Mottled** is a two ply kraftliner.

The top ply consists of bleached hardwood kraft fibres. The bleaching is closed (CLB) and totally chlorine free (TCF).

The base ply is a mixture of softwood kraft fibres and high quality recycled fibres from corrugated board.

The recycled fibres are heat treated to kill mould fungi.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core | 10 centimetres is standard. |
| Reel width | Minimum width is 60 and maximum width is 350 centimetres. The trimmed width of the paper machines are 6,5 metres. |
| Reel diameter | 125 or 145 centimetres are the two standards. |
| Winding mode | Top side (printing side) is wound outwards. |
| Marking | Marking on both reel ends. Two labels on the belly. |
| Reel wrapping | Paper end is both glued and taped. No bands are used. Core plugs are made of wood when used. |
| Quality management system | Certified to SS-EN ISO 9001. |
| Environmental management system | Certified to SS-EN ISO 14001. |
| Sustainable forestry | In year 2006, 35 % of the wood used in kraftliner production came from FSC (Forest Stewardship Council) certified forests. This situation is expected to continue in the medium term. |

Kraftliner **White** Top

Typical values at 50 % RH and 23°C

| Property | Unit | Test-method | | | | |
|-----------------------|------------------|-------------|--------|------|------|-------|
| Substance | g/m ² | ISO 536 | 125 | 140 | 175 | 200 |
| Moisture content | % | on - line | ←————— | | 8 | ————→ |
| Thickness | µm | ISO 534 | 150 | 170 | 215 | 245 |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1250 | 1370 | 1670 | 1840 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 470 | 500 | 630 | 690 |
| SCT, CD | kN/m | ISO 9895 | 2,7 | 3,0 | 3,6 | 4,1 |
| Bursting strength | kPa | ISO 2758 | 580 | 660 | 830 | 930 |
| Cobb ₆₀ | g/m ² | ISO 535 | ←————— | | 30 | ————→ |
| Porosity, Bendtsen | ml/min | ISO 5636 | | | 240 | |
| Roughness, Bendtsen | ml/min | ISO 8791-2 | 300 | 350 | 400 | 450 |
| Brightness | % ISO | ISO 2470 | ←————— | | 75 | ————→ |

Guaranteed values at 50 % RH and 23°C

We guarantee that at least 97,5 % of our measured values are equal to or better than the guaranteed values given.

For the intervals specified we guarantee that at least 97,5 % of our measured values are within the tolerance given.

Our testing equipment is calibrated to match the round robin mean value of the Stora Enso Comparative Test. (Billerud Round Robin).

| Property | Unit | Test-method | | | | |
|-----------------------|------------------|-------------|--------|------|-------------|-------|
| Substance | g/m ² | ISO 536 | 125 | 140 | 175 | 200 |
| Substance tolerance | % | ISO 536 | ←————— | | +/- 3 | ————→ |
| Moisture tolerance | % | on - line | ←————— | | 8 +/- 1 | ————→ |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1090 | 1210 | 1510 | 1680 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 360 | 390 | 520 | 580 |
| SCT, CD | kN/m | ISO 9895 | 2,4 | 2,7 | 3,3 | 3,8 |
| Bursting strength | kPa | ISO 2758 | 520 | 590 | 750 | 840 |
| Scott bond | J/m ² | Tappi T 833 | ←————— | | 200 | ————→ |
| Brightness | % ISO | ISO 2470 | ←————— | | 74 | ————→ |
| L*-value | | ISO 5631 | ←————— | | 89,6 - 90,8 | ————→ |
| a*-value | | ISO 5631 | ←————— | | -0,3 - 0,3 | ————→ |
| b*-value | | ISO 5631 | ←————— | | 1,3 - 1,9 | ————→ |

Coated Kraftliner (**Cote Lite**)

Typical values at 50 % RH and 23°C

| Property | Unit | Test-method | | | |
|-------------------------------|------------------|-------------|------|------|------|
| Substance | g/m ² | ISO 536 | 130 | 145 | 180 |
| Moisture content | % | on - line | ← | 6,5 | → |
| Thickness | µm | ISO 534 | 130 | 145 | 180 |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1250 | 1330 | 1670 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 470 | 500 | 630 |
| SCT, CD | kN/m | ISO 9895 | 2,8 | 3,1 | 3,8 |
| Bursting strength | kPa | ISO 2758 | 580 | 630 | 830 |
| Cobb ₆₀ brown side | g/m ² | ISO 535 | ← | 30 | → |
| PPS H10 | µm | ISO 8791-4 | 2,7 | 2,7 | 2,7 |
| Brightness | % ISO | ISO 2470 | ← | 81 | → |
| Gloss 75° | % | Tappi T 480 | ← | 30 | → |

Guaranteed values at 50 % RH and 23°C

We guarantee that at least 97,5 % of our measured values are equal to or better than the guaranteed values given.

For the intervals specified we guarantee that at least 97,5 % of our measured values are within the tolerance given.

Our testing equipment is calibrated to match the round robin mean value of the Stora Enso Comparative Test. (Billerud Round Robin).

| Property | Unit | Test-method | | | |
|-----------------------|------------------|-------------|------|-------------|------|
| Substance | g/m ² | ISO 536 | 130 | 145 | 180 |
| Substance tolerance | % | ISO 536 | ← | +/- 3 | → |
| Moisture tolerance | % | on - line | ← | 6,5 +/- 1 | → |
| Tensile stiffness, MD | kN/m | ISO 1924 | 1090 | 1170 | 1510 |
| Tensile stiffness, CD | kN/m | ISO 1924 | 360 | 390 | 520 |
| SCT, CD | kN/m | ISO 9895 | 2,5 | 2,8 | 3,5 |
| Bursting strength | kPa | ISO 2758 | 520 | 560 | 750 |
| PPS H10 | µm | ISO 8791-4 | 3,2 | 3,2 | 3,2 |
| Scott bond | J/m ² | Tappi T 833 | ← | 200 | → |
| Brightness | % ISO | ISO 2470 | ← | 79 | → |
| L*-value | | ISO 5631 | ← | 91,2 - 92,4 | → |
| a*-value | | ISO 5631 | ← | 0,0 - 0,4 | → |
| b*-value | | ISO 5631 | ← | -1,2 - 0,4 | → |

Coated Kraftliner (**Cote Lite**)

Cote Lite is a light coated white top kraftliner. It is a three ply product.

The top ply (the coating) is coated with a total weight of about 10 g/m².

The middle ply consists of bleached hardwood kraft fibres. The bleaching is closed (CLB) and totally chlorine free (TCF).

The base ply is a mixture of softwood kraft fibres and a small amount of high quality recycled fibres from corrugated board.

The recycled fibres are heat treated to kill mould fungi.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core | 10 centimetres is standard. |
| Reel width | Minimum width is 60 and maximum width is 258 centimetres. |
| Reel diameter | 120 centimetres is standard. |
| Winding mode | Top side (printing side) is wound inwards. |
| Marking | Labels on reel ends and the belly. |
| Reel wrapping | Reels are wrapped. Core plugs are made of wood. |
| Quality management system | Certified to SS-EN ISO 9001. |
| Environmental management system | Certified to SS-EN ISO 14001. |
| Sustainable forestry | In year 2006, 35 % of the wood used in kraftliner production came from FSC (Forest Stewardship Council) certified forests. This situation is expected to continue in the medium term. |