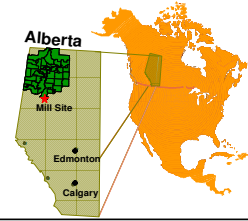




**DAISHOWA-MARUBENI  
INTERNATIONAL LTD.**

**Peace River Pulp Division**

*in harmony with nature*



## Bleached Spruce Softwood Kraft

### Grade Profile

Peace River Spruce Softwood Kraft pulp with its long, slender, flexible, thin walled fibres is the quintessential carrier fibre that exhibits exemplary papermaking properties. This pulp with its exceptionally well balanced fibre length and low coarseness is readily refined to provide superior sheet strength with superb uniformity and smoothness.

### Response to PFI Refining and Handsheet Data

|                            |                      | PFI Revolutions | 0    | 500  | 3000 | 9000  |
|----------------------------|----------------------|-----------------|------|------|------|-------|
| Canadian Standard Freeness | ml                   |                 | 653  | 628  | 507  | 264   |
| Opacity                    | %                    |                 | 76.7 | 73.5 | 67.4 | 63.9  |
| Bulk                       | cm <sup>3</sup> /g   |                 | 1.73 | 1.58 | 1.42 | 1.34  |
| Burst Index                | kN/g                 |                 | 2.2  | 4.6  | 7.4  | 8.3   |
| Multi ply Tear Index       | mN.m <sup>2</sup> /g |                 | 24.1 | 17.2 | 10.1 | 8.9   |
| Single ply tear index      | mN.m <sup>2</sup> /g |                 | 15.6 | 15.7 | 11.0 | 9.2   |
| Tensile                    | kNm/kg               |                 | 33.6 | 59.5 | 95.4 | 108.5 |
| Breaking Length            | km                   |                 | 3.4  | 6.1  | 9.7  | 11.1  |
| Stiffness                  | mNm/kg               |                 | 5.0  | 6.9  | 9.3  | 10.2  |
| Internal Bond              | J / m <sup>2</sup>   |                 | 125  | 180  | 286  | 361   |

### Pulp Characteristics

#### Pulp Sheet Properties

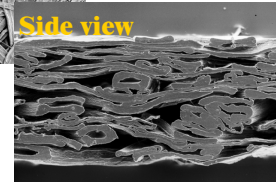
|                    |  |
|--------------------|--|
| Brightness ( ISO)  | > 88 %                                       |
| Dirt Specks (ISO)  | < 5.0 mm <sup>2</sup> / m <sup>2</sup> (ppm) |
| Moisture (Air Dry) | 96 ± 2 %                                     |

#### Chemical Properties

|                       |         |
|-----------------------|---------|
| Ash Content           | 0.35 %  |
| Extractives (Acetone) | 0.10 %  |
| Viscosity (CED)       | >15 CPS |

#### Fibre Properties

|                  |                            |
|------------------|----------------------------|
| Species          | Spruce (90%)<br>Pine (10%) |
| Fibre length     | 2.36 mm                    |
| Fibre width      | 21.9 µm                    |
| Fibres per gram  | 3.5 million                |
| Fibre coarseness | 0.15 mg / m                |



Revised Feb 17, 2009



### Bale Dimensions

#### Size

|        |                  |
|--------|------------------|
| Length | 81.3 cm (32 in.) |
| Width  | 81.3 cm (32 in.) |
| Height | 40.6 cm (16 in.) |

#### Mass

|        |                          |
|--------|--------------------------|
| Weight | 261-268 kg (575-590 lb.) |
|--------|--------------------------|



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FSC Chain of Custody Certification Registration Code: KF-COC-001020

FSC Controlled Wood Certification Registration Code: KF-CW-001020

Quality Management System ISO 9001:2000 Certification No.: CERT-0031684