

Norske Limprodusenters forening  
 v/Moelven Limtre AS  
 Sør laminering AS  
 Vestlandske Limtre AS  
 Postboks 143  
 2391 MOELV  
 Norge

## Assessment of Emission Measurements

1. Emission measurements have been performed on a laminated timber called **Limtre GL 30C Gran** according to "Emission Classification of Building Materials: Protocol for Chemical and Sensory Testing of Building Materials", ver 15.12.2004, test report 3F026536, dated 2014-02-17.

Results of the emission testing:

| Compound                                 | Criteria of M1 after 28 days (mg/m <sup>3</sup> h) | Emission results of <b>Limtre GL 30C Gran</b> after 28 days (mg/m <sup>3</sup> h) | Pass / Fail criteria |
|--|--|---|----------------------|
| TVOC (C <sub>6</sub> – C <sub>16</sub> ) | < 0.2  | 0.040   | <b>PASS</b>          |
| Formaldehyde                             | < 0.05   | < 0.033   | <b>PASS</b>          |
| Ammonia                                  | < 0.03   | < 0.005   | <b>PASS</b>          |
| Carcinogenic compounds (IARC C1)         | < 0.005  | < 0.003   | <b>PASS</b>          |
| Not odorous                              | ≥ 0.1  | 0.8   | <b>PASS</b>          |

The tested product **LIMTRE GL 30C GRAN** complies with all the requirements of M1.


2. The emission test of formaldehyde can be compared to an emission test according to **EN 717-1:2004, E1**.

According to EN 14080:2013 the loading factor for laminated timber in a test according to EN 717-1 is 0.3 m<sup>2</sup>/m<sup>3</sup>. The area specific air flow rate becomes 3.3 m<sup>3</sup>/m<sup>2</sup>h. The test is carried out at 45 % RH, in M1 at 50 % RH. After adjustment of this difference (division by 1.09 (ASTM E 1333-96)) the emission of formaldehyde of the tested sample expressed as concentration is conc < 0.033 /3.3/1.09 < 0.009 mg/m<sup>3</sup>.

| Compound     | Criteria of E1 EN 717-1 (mg/m <sup>3</sup> ) | Formaldehyde result of <b>Limtre GL 30C Gran</b> expressed as concentration according to EN 717-1 (mg/m <sup>3</sup> ) | Pass / Fail criteria |
|--------------|--|--|----------------------|
| Formaldehyde | < 0.124                                      | < 0.009  | <b>PASS</b>          |

### SP Technical Research Institute of Sweden SP Chemistry, Materials and Surfaces - Chemistry

Performed by

  
 Maria Rådemar

Examined by

  
 Marcus Vestergren

#### SP Technical Research Institute of Sweden

|                 |                 |                      |
|-----------------|-----------------|----------------------|
| Postal address  | Office location | Phone / Fax / E-mail |
| SP              | Västerås        | +46 10 516 50 00     |
| Box 857         | Brinellgatan 4  | +46 33 13 55 02      |
| SE-501 15 BORÅS | SE-504 62 BORÅS | info@sp.se           |
| Sweden          |                 |                      |

Laboratories are accredited by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC) under the terms of Swedish legislation. This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.