

<b>MATERIAL CERTIFICATE - EN 10204 3.1</b>			
NO 11-451			
CUSTOMER: <b>Frekhaug Stål</b>		CUSTOMER ORDER NO: <b>FS9687</b>	
PRODUCT: <b>KROK 6T</b>	CHARGE: <b>11A16 11C22</b>	QUANTITY <b>3 17</b>	OUR REF: <b>ØB</b>
MATERIAL QUALITY: <b>S 165 M</b>			

**Chemical composition and technical delivery conditions, as per EN 10213-4**

Performed by: Frekhaug Stål AS

Date:

CH. NR.	C	Si	Mn	P	S	Cr	Ni	Mo	N	Ti	Co	W	Fe
<b>11A16</b>	<b>,029</b>	<b>,72</b>	<b>,49</b>	<b>,015</b>	<b>,009</b>	<b>16,49</b>	<b>4,95</b>	<b>1,04</b>	-	-	-	-	<b>Bal</b>
<b>11C22</b>	<b>,033</b>	<b>,783</b>	<b>,52</b>	<b>,015</b>	<b>,008</b>	<b>16,71</b>	<b>4,81</b>	<b>1,07</b>	-	-	-	-	<b>Bal</b>

**MECHANICAL PROPERTIES:**

Performed by: Quality Lab AS

Date:

CHARGE NO	YIELD STRESS Rp 0.2 N/mm <sup>2</sup>	TENSILE STRENGTH N/mm <sup>2</sup>	ELONGATION A5 %	CONTRACTION Z %	IMPACT STRENGTH J (T=-20°C)	HARDNESS HB
<b>11A16</b>	<b>872</b>	<b>969</b>	<b>18</b>			<b>316</b>
<b>11C22</b>	<b>782</b>	<b>997</b>	<b>17</b>			<b>322</b>

**HEAT-TREATMENT:**

- HEAT TREATED AT 1020 C. COOLED IN WATER
- HEAT TREATED AT 580 C. COOLED IN AIR

Produced in Norway, by Frekhaug Stål AS.

Approved producer according to PRESSURE EQUIPMENT DIRECTIVE

97/23/EC according to Annex I, Par. 4.3.

Cert.no : TK-00024

WE CONFIRM THAT THE TEST RESULTS FROM ABOVE ARE CORRECT.

Frekhaug Date: 07.04.2011



Øystein Blom  
 Qa/Technical Manager