



Aperam Stainless Services & Solutions Germany GmbH

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**TEST REPORT  
RELEVÉ DE CONTRÔLE  
WERKSZEUGNIS**

According to / Selon / Nachdem  
EN 10204

BL: 0022583 - 3

Date: 23/11/2020

|   |  |
|---|--|
| <b>Manufact. / Product. /Herstell.</b><br>APERAM STAINLESS S.ETS.INTERNATIONAL  | <b>Item / Article / Produkt</b><br>96-311024                       |
| <b>Supplier Lot / Lot Fourn. / Band Nr</b><br>070092  | SHEETS 4301/4307 2B WITHOUT PAPER 3,0 X 1500,0 X 3000,0 MARK OF GO |
| <b>Heat N° / N° de coulée / Schmelz Nr</b><br>521910  | <b>Customer / Client / Kunde</b><br>OVAKO METALS OY AB             |
| <b>Steel Designation / Désignation Acier / Stahlbezeichnung</b><br>EN 10028-7 WNR 1.4307/1.4301<br>EN 10088-2 WNR 1.4307/1.4301<br>ASTM A 240(M) TYPE 304L/304<br>ASME SA 240 TYPE 304L/304 | <b>Order / Commande / Order</b><br>011913749 - 02                  |
|   | <b>Reference / Référence / Referenz</b><br>017579                  |

AD 2000 W2 -- AD 2000 W10 -- PED 2014/68/EU

**Mill Certificate / N° de Certificats / Prüfzeugnis Nr**  
20I0651791

**Chemical Analysis / Analyse Chimique / Chemische Zusammensetzung**

|  | C     | Si   | Mn   | Ni   | Cr    | Mo | Ti | N     | S     | P     | Cu | Al |  |  |  |  |
|--|-------|------|------|------|-------|----|----|-------|-------|-------|----|----|--|--|--|--|
| Cast Analysis<br>Analyse Coulée<br>Analyse | 0,023 | 0,42 | 1,42 | 8,05 | 18,16 |    |    | 0,073 | 0,004 | 0,033 |    |    |  |  |  |  |

**Mechanical Properties / Propriétés Mécaniques / Mechanische Werte EN ISO 6892-1 B**


|  | Yield strength<br>Limite D'élasticité<br>Dehngrenze MPA |       | Tensile strength<br>Résistance à la traction<br>Zugfestigkeit MPA | Elongation after fracture (A)<br>Allongement après rupture<br>Bruchdehnung % |       | Hardness<br>Dureté<br>Haerte | % |
|--|---|-------|---|--|-------|------------------------------|---|
|  | Rp 0.2 %  | Rp 1% | Rm  | A5   | 50 mm | HRB                          |   |
|  | 303   |       | 641   |  | 54    | 84                           |   |

**Material identification / Identification Matière / Identifizierung Sachgebiet**

| Lot Nr<br>N° Lot<br>Los Nr | Weight<br>Poids<br>Gewicht | Lot Nr<br>N° Lot<br>Los Nr | Weight<br>Poids<br>Gewicht | Lot Nr<br>N° Lot<br>Los Nr | Weight<br>Poids<br>Gewicht | Lot Nr<br>N° Lot<br>Los Nr | Weight<br>Poids<br>Gewicht |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                            | Kg                         |                            | Kg                         |                            | Kg                         |                            | Kg                         |
| T075556                    | 1062                       |                            |                            |                            |                            |                            |                            |
| T075557                    | 1062                       |                            |                            |                            |                            |                            |                            |
| T075560                    | 1062                       |                            |                            |                            |                            |                            |                            |
| T075561                    | 1062                       |                            |                            |                            |                            |                            |                            |
| T075562                    | 1062                       |                            |                            |                            |                            |                            |                            |

Number of lots / Nombre de lots / Bunde Anzahl : 5

Total weight / Poids Total / Gesamt Gewicht [Kg] : 5310

|   |  |   |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
|---|--|---|--|--|--|---|--|--|--|---|--|--|--|---|--|---------------|--|-------------|--|-----------|--|-----------|--|-----|--|
| <br>Aperam - Stainless France<br>Aperam Isbergues<br>62330 Isbergues<br>FRANCE  |  | <b>MILL CERTIFICATE BS EN 10204/3.1</b><br><b>CERTIFICAT DE RECEPTION NF EN 10204/3.1</b><br><b>ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1</b>  |  |  |  |   |  |  |  |   |  | N-Nr-N <b>20I0651791-01 V01</b>  |  |   |  |               |  |             |  |           |  |           |  |     |  |
|   |  | Ausgestellt im Einvernehmen mit dem TÜV SÜD - Auf Gegenzeichnung wird verzichtet<br>Issued in accordance with TÜV SÜD - Verification is not required<br>Etabli en accord avec le TÜV SÜD - Dispense de contresignature<br>AD 2000 Merkblatt W0 - PED 2014/68 EU Annex I.Point 4.3 |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>Manufacturer's works order number</b><br>N° de la commande usine productrice<br>Werkauftragsnummer<br><b>80625851 /01-06547/1</b>  |  | <b>Surveyor's mark</b><br>Cachet de l'expert<br>Stempel des<br>Werkssachverstaendigen<br><br><b>UI2</b>   |  | <b>Purchaser and/or consignee</b><br>Client et/ou destinataire<br>Besteller und/oder Empfaenger<br><br><b>APERAM SS&amp;S ERKRATH</b><br>Hildener Straße 28<br><br>40699 Erkrath<br>ALLEMAGNE  |  |   |  | <b>Purchaser's order number</b><br>N° de commande client<br>Kundenbestellnummer<br><b>010875741</b>  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>Product - Produit - Erzeugnis</b><br>COLD-ROLLED COIL<br>BOBINE LAMINEE A FROID<br>KALTGEWALZTES BAND  |  |   |  | <b>Any supplementary requirements</b><br>Prescriptions supplémentaires - Zusätzliche Anforderungen   |  |   |  | <b>Customer article number</b><br>N.article client<br>Artikelnummer des Kunden<br><b>ART214199</b>   |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>Steel designation</b><br>Désignation de l'acier<br>Stahlbezeichnung<br><br>EN 10028-7 / 16 - W2-W10 -1.4307 -1.4301<br>ASTM A 240 / 20 - TYPE 304L -TYPE 304<br>ASME SA 240 / 19 - TYPE 304L -TYPE 304<br>EN 10088-2 / 14 - 1.4307 -1.4301<br>EN 10088-4 / 09 - 1.4307 -1.4301 |  | <b>Finish</b><br>Présentation<br>Ausführung<br><br>2B<br>2B<br>2B<br>2B<br>2B   |  | <b>Steelmaking process</b><br>Mode d'élaboration de l'acier - Stahlherstellungverfahren<br>Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting<br>Proc.fabric.: Four à arc - VOD/AOD - Coulée continue<br>Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage |  |   |  | <b>Product delivery condition</b><br>Etat de livraison du produit - Lieferzustand<br><br><b>Solution annealing</b><br>Hypertrempe : <b>1040 C MINI</b><br>Lösungsglühen<br><br><b>Forced Air</b><br>Air forcé Gebläse Luft |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| CORR. TEST:ASTM A 262-E: OK / ASTM A480 / A480M -- ASME SA 480/SA 480M / NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103 / ISO 17945 / ASME-C<br>ODE SECT.2 PART A / CORROSION INTERGRANULAIRE SELON ISO 3651/2 : OK /   |  |   |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>Identification of the product</b><br>Identification du produit - Identifizierung des Erzeugnisses<br><b>MELTED IN BELGIUM, MADE IN FRANCE</b>  |  | <b>Dimensions</b><br>Dimensions - Abmessungen<br><br><b>Thickness</b> B09<br>Epaisseur - Staerke<br>3,000 mm  |  |  |  | <b>Width</b> B10<br>Largeur - Breite<br>1500,00 mm                            |  | <b>Length</b> B11<br>Longueur - Laenge   |  | <b>Number of pieces</b> B08<br>Nb de pièces - Stueckzahl<br><b>1</b>    |  | <b>Net weight</b> B13<br>Poids net - netto Gewicht<br><b>23540 KGS</b>   |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>Coil n.</b><br>N.Bobine - Band Nr.<br>70092  |  | <b>Heat n.</b><br>N.Coulée - Schmelz Nr.<br>521910  |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG</b>   |  |   |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
|   |  | <b>C</b>  |  | <b>Si</b>  |  | <b>Mn</b>   |  | <b>Ni</b>  |  | <b>Cr</b>   |  | <b>Mo</b>  |  | <b>Ti</b>   |  | <b>N</b>      |  | <b>S</b>    |  | <b>P</b>  |  | <b>Co</b> |  |     |  |
| <b>Required -Exigé</b> %mini<br>Anforderung. %maxi  |  | 0,030   |  | 0,75   |  | 2,00  |  | 8,00<br>10,50  |  | 18,00<br>19,50  |  |  |  |   |  | 0,100         |  | 0,0150      |  | 0,045     |  |           |  |     |  |
| Cast Analysis<br>Analyse coulée<br>Analyse Schmelze   |  | 0,023   |  | 0,42   |  | 1,42  |  | 8,05   |  | 18,16   |  |  |  |   |  | 0,073         |  | 0,0037      |  | 0,033     |  | 0,162     |  |     |  |
|   |  | C71   |  | C72  |  | C73   |  | C74  |  | C75   |  | C76  |  | C77   |  | C78           |  | C79         |  | C80       |  | C81       |  | C82 |  |
| Positive material identification carried out : OK<br>Tests de vérification de la conformité de la nuance fournie : OK<br>Verwechslungsprüfung wurde durchgeführt : OK   |  |   |  |  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| Location (1)  |  | <b>MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE</b> ISO 6892-1 B / A-SA 370  |  |  |  |   |  |  |  |   |  | C20  |  |   |  |               |  |             |  |           |  |           |  |     |  |
|   |  | Room temperature - Température ambiante - Raumtemperatur  |  |  |  |   |  |  |  |   |  | Test temperature (°C) :  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| Direction (2)   |  | <b>Yield or proof strength</b><br>Limite d'élasticité<br>Dehngrenze MPa   |  | <b>Tensile Strength</b><br>Résistance à la traction<br>Zugfestigkeit MPa   |  | <b>Elongation after fracture</b><br>Allongement après rupt.<br>Bruchdehnung % |  | <b>Hardness</b><br>Dureté<br>Haerte  |  | <b>Yield or proof strength</b><br>Limite d'élasticité<br>Dehngrenze MPa |  | <b>Tensile str.</b><br>Résist. MPa<br>Zugfestigkeit  |  | <b>Elongation %</b><br>Allongement.<br>Bruchdehnung |  |               |  |             |  |           |  |           |  |     |  |
|   |  | <b>Required</b><br>Exigé<br>Anforderung   |  | <b>Rp0.2%</b>  |  | <b>Rp1%</b>   |  | <b>Rm</b>  |  | <b>5,65</b>   |  | <b>50mm</b>  |  | <b>HRBW</b>   |  | <b>Rp0.2%</b> |  | <b>Rp1%</b> |  | <b>Rm</b> |  |           |  |     |  |
| <b>1</b>  |  | <b>T</b>  |  | mini<br>maxi   |  | 230<br>260  |  | 540<br>700   |  | 45<br>40  |  | 92   |  |   |  |               |  |             |  |           |  |           |  |     |  |
| <b>2</b>  |  | <b>T</b>  |  | <b>Obtained</b><br>Obtenu<br>Ergebnisse  |  | 303<br>340  |  | 641  |  | 56<br>54  |  | 84<br>85   |  |   |  |               |  |             |  |           |  |           |  |     |  |
|   |  | C11   |  | C14  |  | C12   |  | C13  |  | C15   |  | C31  |  | C16   |  | C17           |  | C18         |  | C19       |  |           |  |     |  |
| Impact strength test<br>Essai de résilience<br>Kerbschlagzähigkeitstest   |  |   |  | Corrosion test<br>Test de corrosion<br>Korrosionstest  |  |   |  |  |  |   |  |  |  |   |  |               |  |             |  |           |  |           |  |     |  |
| C40   |  | t(°c)   |  | C44  |  | <b>EN ISO 3651-2 :OK</b>  |  |  |  | C50   |  | C51  |  | C52   |  | C53           |  | C54         |  | C55       |  | C05       |  |     |  |
|   |  |   |  |  |  | D51   |  |  |  | Internal cleanliness:   |  | A:   |  | B:  |  | C:            |  | D:          |  | C57       |  |           |  |     |  |
| <b>Location of the sample (1)</b><br>Emplacement de l'échantillon<br>Lage des Probenabschnittes<br>1. Front - Début - Anfang<br>2. Back - Fin - Ende<br>3. Middle - Milieu - Mitte  |  |   |  | <b>The delivery is in accordance with the order</b><br>La fourniture est conforme aux exigences de la commande<br>Die lieferung entspricht den Bestellbedingungen  |  |   |  | <b>Organisation inspection</b><br>Organisme et/ou service contrôle<br>Ueberwachungsabteilung   |  |   |  | <b>Quality Control</b><br>02/10/2020<br><b>Laurent DUBOIS</b><br><br><b>The inspector</b><br>Le responsable<br>Der Werkssachverstaendige |  |   |  |               |  |             |  |           |  |           |  |     |  |
| C01   |  |   |  | C01  |  |   |  | <b>Packing list</b><br>Avis d'expédition<br>Lieferscheinnummer<br><b>201002I00171-102381</b>   |  |   |  | A10  |  |   |  | A05           |  |             |  |           |  |           |  |     |  |
| <b>Direction of the test pieces (2)</b><br>Orientation des éprouvettes<br>Probenrichtung<br>T. Transverse - Travers - Quer<br>L. Longitudinal - Long - Laengs   |  |   |  | <b>Marking, inspection and measurement : without objection</b><br>Contrôle de marquage, d'aspect et de dimensions : satisfaisants<br>Pruefung der Stempelung, des Oberflaechenaspekts und der<br>Abmessungen : ohne Beanstandung   |  |   |  | D01  |  |   |  | Z02  |  |   |  |               |  |             |  |           |  |           |  |     |  |