D2.5 – Deliver a Coil of K44M steel for coating at SMT

PROJECT INFORMATION

GRANT AGREEMENT NUMBER	826323
PROJECT FULL TITLE	Low Cost Interconnects with highly improved Contact Strength for SOC Applications
PROJECT ACRONYM	LOWCOST-IC
FUNDING SCHEME	FCH-JU2
START DATE OF THE PROJECT	1/1-2019
DURATION	36 months
CALL IDENTIFIER	H2020-JTI-FCH-2018-1
PROJECT WEBSITE	www.lowcost-ic.eu

DELIVERABLE INFORMATION

WP NO.	2
WP LEADER	Jan Froitzheim
CONTRIBUTING PARTNERS	Aperam
NATURE	Samples
AUTHORS	Pierre-Olivier Santacreu
CONTRIBUTORS	
CONTRACTUAL DEADLINE	12-2019
DELIVERY DATE TO EC	03-2020

DISSEMINATION LEVEL

PU	Public	X
PP	Restricted to other programme participants (incl. Commission Services)	
RE	Restricted to a group specified by the consortium (incl. Commission Services)	
CO	Confidential, only for the members of the consortium (incl. Commission Services)	

1 Documentation of delivery

Following coil of metal have been sent for SMT:

- 1 coil (1 ton) of K44M, 400mm width 0.5 mm thickness
  DOCUMENTATION OF THE SHIPMENT AND TEST REPORT IN ANNEX

LOWCOST-IC

A04

aperam

Aperam - Stainless France
Aperam Gueugnon
71130 Gueugnon
FRANCE

A01

TEST REPORT BS EN 10204/2.2
RELEVE DE CONTROLE NF EN 10204/2.2
WERKSZEUGNIS DIN EN 10204/2.2

A02

N-Nr-N **20G0626316-01 V01** A03

ISO 9001:2015 - IATF 16949:2016 - ISO 14001:2015

Z05

Manufacturer's works order number
N° de la commande usine productrice
Werksauftragsnummer
80563920 /01-42347/1

A08

Z03

Purchaser and/or consignee
Client et/ou destinataire
Besteller und/oder Empfänger

APERAM STAINLESS FRANCE
6 rue André Campra

93200 ST DENIS
FRANCE

A06

Purchaser's order number
N° de commande client
Kundenbestellnummer
cde dev ali zaad

A07

Product - Produit - Erzeugnis
COLD-ROLLED COIL
BOBINE LAMINEE A FROID
KALTGEWALZTES BAND

B01

Customer article number
N.article client
Artikelnummer des Kunden

A09

Steel designation
Désignation de l'acier
Stahlbezeichnung

EN 10088-2 / 14 - 1.4521

B02

Finish
Présentation
Ausfuehrung

2B

Steelmaking process
Mode d'élaboration de l'acier - Stahlherstellungverfahren
Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting
Proc.fabric.: Four a arc - VOD/AOD - Coulée continue
Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage

C70

Any supplementary requirements
Prescriptions supplémentaires - Zusätzliche Anforderungen

B03

Product delivery condition
Etat de livraison du produit - Lieferzustand

Annealed
Recuit
Geglüht

820 C MINI

Forced Air
Air forcé Geblaese Luft

B04

Z06

Identification of the product
Identification du produit - Identifizierung des Erzeugnisses
MELTED IN BELGIUM, MADE IN FRANCE

B07

Dimensions
Dimensions - Abmessungen

Thickness B09
Epaisseur - Staerke
0,500 mm

Width B10
Largeur - Breite
400,00 mm

Length B11
Longueur - Laenge

Number of pieces B08
Nb de pièces - Stueckzahl
1

Coil n.
N.Bobine - Band Nr.
938972

Heat n.
N.Coulée - Schmelz Nr.
424361

Net weight B13
Poids net - netto Gewicht
1046 KGS

CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG

	C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Nb					
Required -Exigé %mini Anforderung. %maxi	0,025	1,00	1,00		17,00 20,00	1,800 2,500	0,800	0,030	0,0150	0,040						
Cast Analysis Analyse coulée Analyse Schmelze	0,015 C71	0,40 C72	0,30 C73	C74	18,96 C75	1,865 C76	0,011 C77	0,019 C78	0,0017 C79	0,024 C80	0,586 C81	C82	C83	C84	C85	C86

Positive material identification carried out : OK
Tests de vérification de la conformité de la nuance fournie : OK
Verwechslungspruefung wurde durchgefuehrt : OK

C04 C93 D52

Location (1)

MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE C20

Room temperature - Température ambiante - Raumtemperatur | Test temperature (°C) : C03

Direction (2)

		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa	Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte	Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit	Elongation % Allongement. Bruchdehnung
	Required Exigé Anforderung	Rp0.2%	Rp1%	Rm		50mm		Rp0.2%	Rp1%	Rm	
	mini maxi	320		420 640		20					
T	Obtained Obtenu Ergebnisse	349 C11	C14	563 C12	C13	29 C15	C31	C16	C17	C18	C19

Impact strength test Essai de résilience Kerbschlagzaehigkeitstest		Corrosion test Test de corrosion Korrosionstest								
C40	K(°c) C44		C50	C51	C52	C53	C54	C55	C05	
	C42	D51	Internal cleanliness:		A:	B:	C:	D:	C57	

Location of the sample (1)
Emplacement de l'échantillon
Lage des Probenabschnittes
1. Front - Début - Anfang
2. Back - Fin - Ende
3. Middle - Milieu - Mitte

C01

The delivery is in accordance with the order
La fourniture est conforme aux exigences de la commande
Die lieferung entspricht den Bestellbedingungen

Z01

Packing list
Avis d'expédition
LieferscheinNummer
200213G01564-101242

A10

Organisation inspection
Organisme et/ou service contrôle
Ueberwachungsabteilung

A05

Customer Quality

13/02/2020

Romain GERARD

The inspector
Le responsable
Der Werkssachverstaendige

Z02

Direction of the test pieces (2)
Orientation des éprouvettes
Probenrichtung
T. Transverse - Travers - Quer
L. Longitudinal - Long - Laengs

C02

Marking, inspection and measurement : without objection
Contrôle de marquage, d'aspect et de dimensions : satisfaisants
Prüfung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung

D01

ZSQ701 - PSS

Acknowledgment

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 826323. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe research.