

Huzhou

Plant:

Aluminum Standard

TZW-Interior-01 Owner 负责人: Wenwei Lin

Document Number 文件号:

Revision 版本号:

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铝材标准

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1 General information about the company standard 标准概述

Purpose 用途:	This company standard characterises the coating & non-coating aluminum coils used for perforated & non-perforated ceiling panel. 此标准适用于冲孔,非冲孔天花吊顶板的涂层及非涂层铝卷的特性描述	
Scope 范围:	The arrangement apples to: ZhejiangTianzhiwangaluminum in aluminum processing as defined in Manufacturing specification and additionally serves for the purchasing department as binding catalogue of requirements for external suppliers. 此规格适用于浙江天之旺铝业按确定的生产要求进行加工,也作为对供货商采购时的附加强制性要求	
Main contact person 主要联系人:	Head of QM Department 质量部负责人	
Editorial office 修订部门:	QM Department, TZW质量部	

2 Basic regulation 基本规则

2.1 Request 1

All orders of aluminum have to be confirmed, manufactured and supplied according to this company standard. 所有按此标准采购的订单必须确认并且按此标准进行生产,供货

2.2 Request 2

In case that the revision level of this company standard, as stated in the order, is not in hand of the supplier/manufacturer, it has to be requested from TZW

若果供应商/生产商未获得订单注明的标准修订版,必须从**天之旺铝业**获取

2.3 Request 3

Request which differ from this company standard (standard products) are stated in the order explicitly and have higher priority.不同于公司标准(标准产品)的标准必须在订单中详细说明,具有更高的优先权

2.4 Request 4

All EN norms applied for the aluminum orders under this company standard are stated in term of 6.1, the restrictions which stated in the term of 3 have to be adhered to the manufacturer/supplier in order to grant a high quality further processing at the production of TZW.

条款 6.1 汇总了此标准下的铝卷订单的 EN 规范,为确保 T Z W 生产部进行高质量,深层次的加工,供应商/生产商必须遵守本标准条款 3 的限制规定

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3 Regulation/Demands 规则/要求

3.1 Quality of material 材质			
Condition at delivery 交货状态	Quality of material/carrier material 材质/底材		
Nature/光铝	EN AW-3003 <al cu="" mn1=""> H24</al>		
Continuously organically coating/ 连续有机镀膜	EN AW-3003 <al cu="" mn1=""> H24</al>		

Any differing quality of the material from the standard respectively from the carrier's material will and has to be stated explicitly in the order and has a high priority. 底材不同于以上材料必须在订单中明确注明,享有优先权.

3.2 Measurements at margin and shape tolerances 边缘及形状公差

For all aluminum alloys which have been delivered according to this company standard are valid in general, the tolerances stated in 3.2.1 till 3.2.5. 在此标准下提供的铝合金通常情况下符合 3.2.1 至 3.2.5 中给出的公差范围

.2.1 Tolerance of the thickness 厚度公差			
*Nominal thickness 厚度 t(mm)	Tolerance 公差(mm)		
t<=0.6	+/-0.03		
0.6 <t<1.0< td=""><td>+0.03/-0.05</td></t<1.0<>	+0.03/-0.05		
1.0 <t<=1.5< td=""><td>+/-0.04</td></t<=1.5<>	+/-0.04		
1.5 <t<=2.0< td=""><td>+/-0.06</td></t<=2.0<>	+/-0.06		
t>2.0	+/-0.07		

3.2.2 Tolerance of the widths 宽度公差

Tolerances	*Nominal thickness	*Nominal widths 额定宽度 b (mm)				
公差	额定厚度(mm)	<=300	300 <b<=1000< td=""><td>1000<b<=1200< td=""><td>>1200</td></b<=1200<></td></b<=1000<>	1000 <b<=1200< td=""><td>>1200</td></b<=1200<>	>1200	
	<=1.0	-0.3	-0.8	-1.0	-1.5	
	>1.0<=1.5	-0.5	-1.0	-1.2	-2.0	
	>1.5	-0.7	-1.2	-1.5	-2.5	

The allowance above has to be positioned with zero in all cases / 任何情况下,公差上线是 0

3.2.3 Tolerance of the length 长度公差(适合于片材)

额定宽度 b(mm)	长度公差 I (mm)	对角线差值公差(mm)
<600	+0/-0.3	<0.5
600 <b<=1200< th=""><th>+0/-0.5</th><th><0.5</th></b<=1200<>	+0/-0.5	<0.5
>1200	+0/-0.5	<1.0

^{*}Nominal thickness given from order / 额定厚度由订单给出

^{*}Nominal widths given from order / 额定宽度由订单给出



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● There is no restrictions of the length of bond material / 卷料长度无限制

• The limit deviation for the bond length results from the variation tolerance according to the quantity stated in the order (refer to 4.1) / 由于公差变化引起的卷料长度的最大误差需在订单中注明(具体参照 4.1 条款)

3.2.4 Tolerance of the evenness 平整度公差

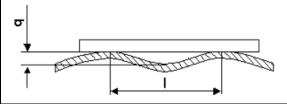
Due to the storage from (in coil), results a restriction of the evenness of bond material only for the following seizes / 由于存储形式(卷料)导致捆扎的材料平整度存在误差,限制如下:

- Hunches 突起: q_{max}=3mm for a hunch length of l>=500mm one hunch only per meter

当突起长度 I>500mm 时,突起高度 qmax=3mm

- wave edge 边弯曲: qmax=2mm for a wave edge of l>=500mm one wave edge only per meter

当边弯曲长度 I>500mm 时,突起高度 qmax=2mm



3.2.5 Tolerance of rectitude and rectangularity 直线度公差

The maximum discrepancy from the rectitude of the edges is not allowed to exceed the following measuring length 边角直线度的最大差异不能超过以下测量长度:

- q_{max} = 1mm for 1000mm measuring length (q_{max}=1mm 一米测量范围)
- q_{max} = 2mm for 2000mm measuring length (q_{max}=2mm 三米测量范围)



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3.3 Surfaces/Coatings 表面/涂层

3.3.1 Protection foil 保护膜

3.3.1.1 Quality of material 材质

Polyethylene 聚乙烯复合膜+TZW Coilcoat LOGO(Middle 中间层)

3.3.1.2 Physical properties Requirement 物理性能要求

Item 项目	Standard 标准	Norm 标准
Thickness 厚度	50-80um	
180º peel strength180 剥离力	100-150g/in(No residue 表面无残胶)	EN13523-17
Release force 解卷力	<20g/in	EN9073-T3

3.3.1.3 Others 其它要求

- The foil must not reach out the edge of material and no more than 5mm based on the material width. 保护膜宽度不能超过卷料宽度,单边最窄不允许超过5mm以上。
- No bubble,no contamination, no damage, no wrinkle and no splice are allowed. 保护膜表面必须无气泡,无污染、无破损、无皱褶,无接头。

3.3.2 Base material requirement(基材要求)

- 1) Small defects like discolorations, strips, striations, scratches etc .must not influence the quality of a later powder-coating --a consistent hematogenous surface after coating on visual observation 类似未上色,斑纹,条纹, 划痕等小瑕疵不影响后续喷涂外观质量--喷涂后观察表面一致性
- 2) 卷材二边的毛刺方向要求一致,且毛刺不超过材料厚度的 10%。

Mechanical Requirement 性能要求

Attributes	Attributes 属性(Al3003 H24)		
Mechanical values 机械性能值	Tensile strengths 拉伸长度 Rm 145-195(N/mm2)	EN10002-1: 2001/GB3880-2	
	Yield point 延伸度 Rp0.2 >=115(N/mm2)		
	Elongation at break 延伸率 A(标准 50mm(%)>=4		
Chemical composition 化学成分		EN573-3/GB/T3190	

Above testing requirements and report need to made for each delivery batch and send for each delivery to TZW 对每次出货,以上测试必须实施并提供报告给天之旺



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3.3.3 Continuously organically coating/ 连续有机镀膜

Optical requirements 目测要求

Surface 表面:

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1) The coated products must have a unique appearance and also meet the following requirements: The coating layer on the viewing surface must be free of injury that extends down to the base metal. When viewing coated visible surfaces perpendicular to the surface, none of the following errors may be seen: strong roughness, runs, bubbles, craters, dull spots, holes, scratches

涂层损伤不允许露出基材,涂层外观不允许粗糙,流痕,气泡,凹啃,凸点,气孔,划痕

2) In the area less than 10cm*10cm, number of inclusions in the size less than 0.5mm in diameter(or shrinkage hole in the size less than 2mm in diameter)shouldn't be more than 3, and the distance of inclusions should be more than 20mm, in the size more than 0.5mm is not allowed

面积<=10cm*10cm 内,直径不大于 0.5mm 颗粒状杂质(或小于 2mm 凹陷缩孔)不得多于 3 个,且杂质之间距离不小于 20mm,超过 0.5mm 颗粒杂质不接受

3) Orange peel effect is check by visual in daylight. The distance between inspector and coating surface is 1m, check period is within 20-30s 橘皮样检查以自然光线下目测为准,涂层离检视员距离 1m,观察 20-30 秒 In addition, the following parameters must be met:

另外以下参数必须符合:

Color 颜色

Code 编号	L-A-B	Max. Range Delta E Acc.DIN6174 按 DIN6174 最 大允收色差	Gloss-rate acc.to DIN EN ISO 2813 光泽 度,按 DIN EN ISO 2813 标准	Gloss-rate tolerance 光泽度允收 范围范围	Thickness range EN ISO2187 按 EN ISO2187,厚 度允收范围	Surface 表面
Global white 全球白	L* 90.50, A* +0.00, B* +01.60		12%			
RAL9010	L* 94.00 A* -0.49, B* +03.97	DE ≤ 0.6	20%		Surface:	Smooth surface 表面平滑
RAL9016	L* 93.00, A* -0.72, B* +01.87		30%	+/-3%	25+/-5um	Optical requirement to
CW9010	L* 94.00 A* -0.49, B* +03.97	⊗1	20%		Backside: 5+/-2um	see above
RAL9006	L* 77.00, A* +0.00, B* -05.00		30%	Not application		
RAL9007	L* 61.00, A* +0.71, B* +00.71	⊗2	30%	不适用		



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⊗1CW9010 color measured is based on the master sample agreed with procoated coil vendor. Every batch tests L/a/b with BYK instrument, and compare Delta E with master sample and the Delta E should be less than or equal to 0.60.

CW9010 每批颜色用 BYK 色差仪测量,并跟标准板对比, Delta E 需小于等于 0.60.

⊗2With Color measurement gages immeasurable. Assessment / release can be made according only by visual pattern matching.(Master Sample- Sample from Pre-coated coil supplier or Project Color sample) 如果颜色没办法测量,评估/签发可以参照色板比较(如:主色板,预辊涂供应商提供的色板,或项目色板)

For all the colors not listed in the above table ("Standard Colors") shall be collected following information in tabular form.未列入以上表格的颜色需要收集以下讯息

- Project 项目
- Production number 项目号
- liquid paint Manufacturers 漆料生产商
- The precise name and liquid powder 漆料名称
- Measured values (L*/a*/b *, gloss level and layer thickness)测试值(色差,光泽,厚度)

Should products and color sample shows after visual inspection a color differences or any other defects, the quality assurance of TZW must be informed.

如果目测的产品,色板有色差或其他不良,必须知会天之旺。

Mechanical Requirement 性能要求

Attributes 属性	Test 测试项目	Norm 标准	Requirement 要求
Formability 成型度	Mandrel bending (cylindrical mandrel) 弯曲实验	DIN EN ISO 1519	≥ 5 mm
	Impact test 撞击实验	ASTM D 2794	≥ 7-9 ip (front/reverse)
	Erichsen test 压凹实验	DIN EN ISO 1520	≥ 3,0 mm
Adhesion 附着力	Cross cutting test 十字切割	DIN EN ISO 2409	GT0
Hardness 硬度	Buchholz hardness 压痕实验	DIN EN ISO 2815	<=1.0mm

Above testing requirements and report need to made for each delivery batch and send for each delivery to TZW 对每次出货,以上测试必须实施并提供报告给天 之 旺

Corrosion Test 耐腐蚀

Test item 测试项目	Norm 标准	Requirement 要求
	British Standard 6496 and 6497 respectively for steel: DIN EN ISO 7253 or DIN 50021-SS for aluminum: DIN 50021-ESS	Aluminium: 1000 h 铝板 1000 小时 Infiltration at the intersection: 2 mm 十字交叉部位的渗透: 2mm

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Quality Procedure 质量程序

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Condensation test 耐湿热测试	DIN 50017 or DIN EN ISO 6270-1	≥ 240 No blistering or loss of gloss recognizable and infiltration on average <1 mm 超过 240 小时,试板无气泡,无可视失光现象,渗透部分平均不超过
		1mm

3.4 Criteria of adaption 适用准则

• For all aluminum strips ordered according to this company standard, 90° angles with smallest radii of 2T have to be realized free of cracks (visual observation without any technical aids) at the processing(machine bending)

此标准下订购铝卷必须实现90°折弯,最小半径2T,折弯过程无裂缝(肉眼观察无任何技术辅助)。

- The strips will be perforated during the processing (perforation with 0,5 to 40 mm diameter) and afterwards adjusted plainly with a precision leveler.
 - 铝材穿孔(直径范围0.5-40mm)后需要调整到精确的直线度。
- The protection foil must not be undermined by commercial lubricants which are used for perforating (e.g Keller IBK 200 or Raziol CLF 11 050).

铝材穿孔过程中可使用润滑油(如Keller IBK 200 或 Raziol CLF 11 050),但保护膜不能被渗透

- The protection foil must not come off autonomously during the perforating process.
 在穿孔过程中,保护膜不能自行脱落。
- After an appropriate pre-treatment, "Nature"- Surfaces must be able to be coated with a conventional way.
 在适当的前处理之后,自然面--表面必须能进行涂层。
- Strip ability of the protection foil cf. 3.3 保护膜剥离度参见3.3
- Processing ability according to defined adaption criteria: at least 12 months from delivery date. 在所定义加工标准下的加工能力: 至少从送货日起12 个月

4 Quantity of delivery and packing 发货及包装数量

4.1 Quantity of delivery 发货数量

- The quantity which has to be delivered is each time stated in the order. 发货的数量必须在每次的订单中说明。
- Variance tolerance according to the quantity of delivery: 0% / + 4% 根据发货的数量, 偏差可为: - 0% / + 4%



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4.2 Quantity of packing 包装数量

- Slit strips have to be coiled with the visible side on the outside. 切条在外部必须以可见面盘绕
- In general, slit strips do have an inner cardboard core.
 通常切条内部有纸板芯。
- The inner diameters which are given in the following chart refer to the inner cardboard core. 以下图表中的内径指内纸板芯。
- Sufficient dimensioning and covering of the wooden pallet with regard to the load pick up and the transportability with a fork lift truck.
 木制托盘尺寸足够大,方便起重装卸,及叉车运输。
- One coil is only permitted for one packing unit, one packing unit is no more than 2.5T.
 卷料只允许独立包装,每个包装不允许超过2.5吨。
- 对于片材,要求每拖少于600片,包装要求如图所示:



Attributes 属性	Nominal widths 额定宽度(mm)		
	<250	250<=b<600	>=600
Position of axis 轴位	Vertical 垂直	Vertical 垂直	Horizontal 水平
Inner diameter 内径	508mm	508mm	508mm
Maximal exterior diameter 最大外径	1200mm	1200mm	1200mm

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Labeling,delivery note 标识与发货单

5.1 Labeling of product 产品标示

Each packing unit has to be provided with a label which contains at least the following data: 每个包装单位必须至少要有以下内容的标签:

Integrated label both outside and inside (according to below standard / the supplier's label of alloy) 原材料外包装与卷芯均需张贴完整的标签(按以下标准或以供应商的合金标签)

- Vendor name/vendor address/vendor contact method供应商名称/地址/联系方式
- Product name /grade/size 材料名称/牌号/尺寸规格
- Material code/lot number/coil number 物料号/批号/卷号
- Color name/颜色名称
- Order number of ABPM / ABPM订单号
- Weight of the packing unit including GW,NW,core weight/ 包装重量,包括毛重、净重、卷芯重量
- Vendor production date/shelf life 供应商生产日期及保质期
- Raw material vendor name of vendor and master lot number/ 原材料原产地及母卷号 Receiving company name: 收货单位:如:浙江天之旺铝业有限公司

5.2 Delivery note 发货单

The whole delivery must have a delivery note as an accompanying document containing the following information 整个送货过程要有送货说明,类似于随附文件包含以下信息:

- 供应商名称/联系地址/联系方式 Vendor name, address, contact number
- Order number / 订单号
- Part number, part description and quantity of delivery / 零部件材料编号,描述及数量
- Amount of the packing / 包装总量
- Each order has to be packed separately (separate order number) / 每个订单要分开包装(按订单号分开)
- Delivery address / 发货地址:天之旺工厂
- _ Delivery date 发货日期



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6 Hints and history of amendments 注意事项及修订记录

6.1 Normative references 规范性引用

For the application of this company standard are valid the terms of the following standards. 公司标准引用以下标准条款:

- EN 573-1, Aluminum and aluminum alloys 铝及铝合金- Numeric labeling system数字标签体系
- EN 515, Aluminum and aluminum alloys 铝及铝合金– Semi-finished labeling of the basic material's condition 基材半成品标签
- EN 10204, Metallic products 金属制品 Types of conformity certificates 合格证种类

The aluminum strips and sheets which have been ordered according to this company standard are based on the following norms with the demands and restrictions stated in point 3.

- 按公司标准订购的铝条和铝板基于以下要求规范及限制,在条款3中有说明。
- EN 485-1, Aluminum and aluminum alloys 铝及铝合金 Technical terms of delivery交货技术条款
- EN 485-2, Aluminum and aluminum alloys 铝及铝合金- Mechanical attributes 机械属性
- EN 485-4, Aluminum and aluminum alloys 铝及铝合金 Measurings in the edges
- and tolerances of shape for cold rolled products 边缘尺寸以及冷轧产品的成型公差
- EN 573-3, Aluminum and aluminum alloys 铝及铝合金- Chemical compositions 化学成分
- EN 1396, Aluminum and aluminum alloys 铝及铝合金- Coil coated sheets and strips for general applications 一般应用的涂层卷料板、条

6.2 History of amendments 修订记录

Revision N0. 版本号	Date 日期	Content of amendments 修订内容	Author 撰写人
1	2014/5/13	新版本发布	Jennifer Zhang
2	2014/7/17	 增加预辊涂铝材对颜色CW9010的判断准则; 修改卷材最大外径尺寸为1200mm。 	Wenwei Lin
3	2015/6/17	3. 修改4.2 包装数量中最大单卷重量为2.5吨。	Wenwei Lin
4	2015/7/10	 修改5.1 产品标识 修改5.2 发货单要求 	Wenwei Lin
5	2016/7/25	 修改3.2.3 片材长度及对角线的要求 修改3.3.2中基材毛刺方向及比例的要求; 修改4.2 包装数量中对于片材的包装要求。 	Wenwei Lin



Plant:

Quality Procedure 质量程序

Aluminum Standard

铝材标准

Document Number 文件号: TZW-Interior-01

Owner 负责人:

Wenwei Lin

Revision 版本号:

05

7 Warranty 担保

Huzhou

With his/her signature, the supplier warrants compliance with the product requirements defined in this company standard. / 有他的签名,供应商担保遵从公司标准里的产品要求。

company stamp date, signature of supplier 供应商盖章,签名及日期 company stamp date, signature of ABPM 公司盖章,签名及日期