1 Premises

In the last years the types and the product range for the METALLI COLLECTION have been largely increased, considering the ongoing interest growth in this product.

In the three-year-period 2005/2007, the SERIE METALLI collection has kept growing in terms of decorative proposals and has given birth to two new collections : METALPRINT and SILVER.

Infotec no. 7 is meant to be a summary of all information related to metallic laminate, therefore all the articles published in the previous Infotec are to be considered obsolete.

Please note all pigmented metals are sensitive to lacquer thinner and should not come in contact with it.

1.1 General chart with MET types

	SERIE METALLI			METALPRINT			SILVER	MET-DECOR
Type MET	MET1	MET 2	MET 3	MET 4	MET 5	MET 6	MET 7	MET 8
Decori MET	729-732-873-874-877	723-724-725-726-730-740-880-881	738	2600-2601-2602-2603-2604-2605-2606-2627-2628-2629-2630-2631-2632-2633-2614-2615-2616-2617-2618	2607-2608-2609-2610-2611-2612-2613-2620-2621-2622-2623-2624-2625-2626-	2592-2593-2594-2595-2596-2597-2598-2599-2634-2635-2636-2637-2638-2639-2640-2641	2700-2701-2702-2703-2704-2705	744-745-746-747

2 General advice for machining and application of the MET 1 - MET 2 – MET 3 - MET4 - MET5 - MET6 - MET 7 - MET8 typologies

We hereby outline some useful advice regarding the use of various MET types. For further specific details please refer to corresponding informative technical sheet of MET products which are attached here below.

Transport, storage, cutting and drilling requirements are the same as with ABET HPL. Therefore general instructions for ABET HPL apply (see our "Technical Information Service" document) together with some additional recommendations, and in particular:

Transport

- During handling operation, we recommend moving the panels with extreme care because sharp edges could scratch the decoratives.

Machining operations

- During all machining operations, the decorative metal surface must face upwards.
- The edges can be smoothed with a file or abrasive paper.
- Do not apply self-adhesive tapes to the metal surface.

Balancing

Because Print MET has different physical characteristics from Print HPL, it is advisable for composite panels to use the same material on both sides, or the type of balancer indicated in the corresponding informative sheet in order to obtain a balanced panel. When using other materials as a balancer, including Print HPL, it will be necessary to carry out preliminary tests.

Gluing

It is possible to glue this material to the same cores commonly used for Print HPL. Only rigid and semi-rigid glues should be used. During the gluing operation in hot presses, the temperature reported in the corresponding informative sheet must not be exceeded. The recommended pressure is 1.5 - 2.0 kg/cm^2 (3-4.5 lbs. / in^2). A protective sheet between the press plate and the metal surface must be used.

Notes

Pay attention to the decorative direction of Print MET. The panels have to be applied **following the direction of the arrows printed on the back of the sheets, which must be pointing always in the same direction.**

Some further **precautions concerning their use**:

- "tonality" variations within the same panel and between different panels may occur
- suitable for **indoor vertical application** with a **low humidity rate** only
- in order to clean, do not use solvents but only cold or mild water with liquid non abrasive neuter detergents and clothes and soft sponges; do not insist on rubbing.

3 SERIE METALLI collection (MET 1 – MET 2 – MET 3)

In the last years the SERIE METALLI collection has been constantly update by the introduction of new decoratives and new finishes. For the three year-period-2005-2007 six finishes have been proposed (Carrè, Millebolli, Pluriball, Bigline, Surfline, Hammer for the decoratives 880-881).

3.1 Informative Technical Sheet PRINT METALLI MET 1 and MEP 1 according to test method of EN 438: 2005 standard

Material consisting of layers of kraft paper impregnated with thermosetting resins and of a lacquered aluminium foil on the surface; all is pressed and bonded together by means of high pressure (9 MPa) and heat (150°C).

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	0,9 ± 0,1
Resistance to surface wear	EN 438-2.10	wear resistance	revs	≤ 20
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 7
		thickness increase	%	≤ 9
		appearance	rating	≥ 3
Resistance to dry heat	EN 438-2.16	appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Formability (for PF type)	EN 438-2.32	radius	mm	**(*)**
Density	ISO 1183	density	Kg/m^3	~ 1.500

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Balancing: use the same material on both sides to obtain a balanced panel or apply MET 796 balancer in the same thickness.

Gluing: during the gluing operation in hot presses, **the temperature of 60° C (140° F) must not be excee ded. The recommended pressure is 1.5 - 2.0 kg/cm^2 (3-4.5 lbs. / in^2).**

(*) Formability: it is not possible to give specific instructions for every different postforming technology, so it is advisable to carry out preliminary bending tests. This will be helpful to determine the correct conditions of one's own bending machine in reference to the material being used.
Generally, these laminates may be bent on stationary bending machines for HPL with conventional rod at lower temperatures in comparison with those applied for HPL PF.
The advice concerning ABET HPL Postforming is not to be considered as a reference for this particular material.

3.2 Informative Technical Sheet PRINT METALLI MET 2 according to test method of EN 438: 2005 standard

Material consisting of layers of kraft paper impregnated with thermosetting resins and of a surface sheet of anodised aluminium; all is pressed and bonded together by means of high pressure (9 MPa) and heat (150°C) (300° F).

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	1,0 ± 0,1
Resistance to surface wear	EN 438-2.10	wear resistance	revs	≤ 20
Resistance to immersione in boiling water	EN 438-2.12	mass increase	%	≤ 7
		thickness increase	%	≤ 9
		appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Density	ISO 1183	density	Kg/m^3	~ 1.700

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Balancing: use the same material on both sides to obtain a balanced panel.

Gluing: during the gluing operation in hot presses, **the temperature of 60° C (140° F) must not be excee ded. The recommended pressure is 1.5 - 2.0 kg/cm^2 (3-4.5 lbs. / in^2).**

Formability: Print MET 2 is not available in the PF version, but in the HPL version can be shaped in order to produce convex curves with the decorative face outwards. However, it is necessary to carry out preliminary tests.

3.3 Informative Technical Sheet MET 1, MET 2 STRATIFICATO (CMT1 – CMT2) according to test method of EN 438: 2005 standard

Self-supporting laminate (from 2 mm) consisting of sheets of kraft paper impregnated with thermosetting resins having on the surface (on one or both sides) an anodised or lacquered aluminium foil; all pressed and bonded together by means of high pressure (9 MPa) and heat (150°C) (30 0º F) in special presses where the polycondensation of the resins takes place.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	2,0 ≤ t < 3,0 ± 0,20 3,0 ≤ t < 5,0 ± 0,30 5,0 ≤ t < 8,0 ± 0,40 8,0 ≤ t < 12,0 ± 0,50 12,0 ≤ t < 16,0 ± 0,60
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	2 ≤ t < 5 ≤ 5 5 ≤ t ≤ 2
		thickness increase	%	2 ≤ t < 5 ≤ 6 5 ≤ t ≤ 2
		appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	2 ≤ t < 5 L 0,6 / T 0,1 5 ≤ t ≤ 25 L 0,5 / T 0,8
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Density	ISO 1183	density	Kg/m^3	~ 1.500

Logistic Note (dec. 873-874)

The decoratives 877 and 873 can be produced in the BK version with two decorated sides and in the thicknesses 4, 6, 8, 10, 12, 14 mm.

The finishes available for the thicknesses mentioned above are :

- Dec. 873 in the SATINATA finish
- Dec. 877 in the finishes MAGMA, MULTIRIGHE, MILLERIGHE, MANDARIN, MORBIDA

Other decoratives belonging to the Serie Metalli collection can be produced in the Compact version in thicknesses from 2 to 6 mm.

4 METALPRINT (MET 4 – MET 5 – MET 6) collection

The METALPRINT collection is made out of a surface in lacquered and perforated aluminium sheet in two different variants. This variation has yielded two versions, Bubble e Grille, both of which offer a unique optical and aesthetic effect.

METALPRINT is divided into four product families:

- **"Colours Bubble – Grille"** rich solid colours contrasting a silver ground;
- **"Wood Bubble"** decorations with wood grains combined with a silver ground, in this case only with circular perforation.
- **"Opalescent Bubble – Grille"** opalescent colours obtained using Diafos laminates that, combined with metal, create sophisticated effects of translucence and depth;
- **"Metal Bubble – Grille"** brilliant and satin-finish metal laminates proposed with a Silver ground;

4.1 Informative Technical Sheet MET BUBBLE and GRILLE COLOURS (MET 4) and MET BUBBLE WOOD (MET 4) according to test method of EN 438: 2005 standard

Material consisting of layers of kraft and decorative paper impregnated with thermosetting resins and by an aluminum foil giving a silver effect. This product is subjected to high pressure and heat in special presses where polycondensation of the resins takes place. By this irreversible reaction the material obtained is stable and compact.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	1,0 ± 0,15
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 8
		thickness increase	%	≤ 10
		appearance	rating	≥ 3
Resistance to dry heat (180°C) (356° F)	EN 438-2.16	appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Cleanability	UNI EN 9300	-	rating	5
Density	ISO 1183	density	Kg/m^3	~ 1500

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Balancing: use the same material on both sides to obtain a balanced panel or apply MET 796 balancer in the same thickness.

Gluing: during the gluing operation in hot presses, **the temperature of 60° C (140º F) must not be excee ded. The recommended pressure is 1.5 - 2.0 Kg/cm^2 (3-4.5 lbs. / in^2).**

4.2 Informative Technical Sheet OPALESCENT BUBBLE and GRILLE (MET 5) according to test method of EN 438: 2005 standard

Material consisting of coloured translucent laminate which lets the light pass through and which gives a silver effect by an aluminum foil. This product is subjected to high pressure and heat in special presses where polycondensation of the resins takes place. By this irreversible reaction the material obtained is stable and compact.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	1,6 ± 0,18
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 4
		thickness increase	%	≤ 5
		appearance	rating	≥ 3
Resistance to dry heat (180°C) (356º F)	EN 438-2.16	appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Cleanability	UNI EN 9300	-	rating	5
Density	ISO 1183	density	Kg/m^3	~ 1500

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Fixing: it can be carried out in two different ways: by framing the panel (eg. into an aluminium frame section) or by fixing it with screws. In the latter case, it will be necessary to use plastic or soft rubber washers to avoid cracking the panel due to screw pressure. Maximum fixing distance, both with frame and screws, is the following :
D1 max. distance (longitudinal) = 90 cm (35 in.) D2 max. distance (transversal) = 30 cm (12 in.)

It is advisable to avoid using Diafos close to lamps or any other heating source which could cause an increase of temperature in certain parts of the panel. The temperature on the surface should never be over 35℃ (9 5º F).

4.3 Informative Technical Sheet METAL BUBBLE and GRILLE (MET 6) according to test method of EN 438: 2005 standard

Material made out of kraft paper layers impregnated with thermosetting resins and an aluminium foil on the surface with round or slotted holes put on top of a coloured aluminium foil in matt or shiny finish. The combination of heat and high pressure creates an irreversible reaction which guarantees the compactness.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	1,2 ± 0,1
Resistance to surface wear	EN 438-2.10	wear resistance	revs	≤ 20
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 7
		thickness increase	%	≤ 9
		appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Density	ISO 1183	density	Kg/m^3	~ 1500

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Balancing: it is advisable for composite panels to use the same material on both sides.

Gluing: during the gluing operation in hot presses, **the temperature of 60° C (140° F) must not be excee ded. The recommended pressure is 1,5-2,0 Kg/cm^2 (3-4.5 lbs. / in^2).**

5 SILVER (MET 7) collection

SILVER (MET 7) is the new laminate with shiny and mirror finish which was born after several researches reflections on nowadays high-tech trends which are currently used in the fields of furniture and design.
The main and absolutely innovating characteristic is given by the three dimensional aesthetic effect of its superficial decorative. This impression of depth is only optic; in fact, by touching it, you can feel a smooth and homogeneous surface.

5.1 Informative Technical Sheet SILVER (MET 7) according to test method of EN 438: 2005 standard

Material consisting of layers of kraft paper impregnated with thermosetting resins and a decorated aluminium foil; all is pressed at 9 MPa e a 150 ℃ (300º F).

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	VALUES
Thickness	EN 438-2.5	thickness	mm	1,0 ± 0,1
Resistance to surface wear	EN 438-2.10	wear resistance	revs	≤ 20
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 7
		thickness increase	%	≤ 9
		appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4
Density	ISO 1183	density	Kg/m^3	~ 1700

Transport

The protective film is without adhesive, therefore, the use on continuous lines could peal it off.

Machinery

Considering the production technology of SILVER (MET 7) the temperature of 40℃ (100º F) must not be excee ded during any working step.

Balancing: it is advisable to use the same material on both sides, in order to obtain a balanced panel, or to apply MET as a balancer 880 in the same thickness.

Gluing: in case of hot gluing operation in hot presses, **the temperature of 40°C (100º F) must not be excee ded. The recommended pressure is 1.5 - 2.0 kg/cm^2 (3-4.5 lbs. / in^2).**

Note:
"Structural" variations within the same panel and between different panels may occur.

5.2 Silver (MET 7): precautions on the application.

Considering Silver surface three-dimensional characteristics, it is necessary to pay attention to the application and assembly of this material:

- suitable for **indoor vertical application with a low humidity rate** only.
- avoid using SILVER for vertical applications where the surface may be subject to rubbing, because the decorative surface can **wear**, and the drawing can be spoiled and even disappear.
- **cleaning advice**: do not use **solvents or alcohol**, but only mild or cold water at a temperature lower than 40℃ (100º F) with neutral liquid non abrasive detergents with cloths and soft sponges; do not insist in rubbing.

6 MET-DECOR (MET 8)

MET-DECOR has been introduced in the Serie Metalli Collection in order to comply with commercial and information requirements, but technically speaking, it has some different characteristics from the Serie Metalli collection.
Please consider the informative technical sheet here below and some precautions when using MET-DECOR.

1 Informative Technical Sheet MET DECOR (MET 8) according to test method of EN 438: 2005 standard

Material consisting of layers of kraft paper impregnated with thermosetting resins and of a decorated anodized aluminium foil on the surface.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY or ATTRIBUTE	UNIT	*VALUES*
Thickness	EN 438-2.5	thickness	mm	0,9 ± 0,1
Resistance to surface wear	EN 438-2.10	wear resistance	revs	≤ 30
Resistance to dry heat (180°C)	EN 438-2.16	appearance	rating	≥ 3
Dimensional stability at elevated temperature	EN 438-2.18	cumulative dimensional change	% long. % transv.	≤ 0,45 ≤ 0,90
Res. to cracking (thin laminates)	EN 438-2.23	appearance	rating	≥ 4
Resistance to scratching	EN 438-2.25	force	rating	≥ 1
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 3
Density	ISO 1183	density	Kg/m^3	~ 1500

Please find here below some further specific details (complementary to chapter 2) for this kind of product.

Balancing: it is advisable for composite panels to use the same material on both sides to obtain a balanced panel, or to apply MET 877 in the same thickness; it will be necessary to carry out preliminary tests

Gluing: during the gluing operation in hot presses, **the temperature of 40° C (100° F) must not be excee ded. The recommended pressure is 1.5 - 2.0 kg/cm^2 (3-4.5 lbs. / in^2).**

6.2 MET-DECOR (MET 8): precautions on the application

It is necessary to pay attention to the application and assembly of this material:

- suitable for **indoor vertical application with a low humidity rate** only.
- avoid using MET-DECOR for vertical applications where the surface may be subject to rubbing, because the decorative surface can **wear**, and the drawing can be spoiled and even disappear.
- **cleaning advice**: do not use **solvents or alcohol**, but only mild or cold water at a temperature lower than 40℃ **(100° F)** with neutral liquid non abrasive detergents with cloths and soft sponges; do not insist in rubbing.

7 Serie Metalli – MetalPrint - Silver: fire behavior

Abet consider the collections SERIE METALLI, METALPRINT and SILVER part of PRINT category, because the decorative element is made out of a thin metal layer, usually aluminium; according to general parameters established by EN 438: 2005 standard PRINT HPL defined as 'fiber-made material layers (paper for example)'. The above mentioned materials will be defined and their requirements specified in part 8 of EN 438: 2005 which is currently in study. However, in terms of fire certification, the definition quoted above is not relevant, because the decorative component does not affect the fire performance, or anyway it is not pejorative. Therefore, concerning fire behaviour, the above mentioned collections are comparable to other ABET series (Colours, I Finti, I Falsi, Serie Milano, Fiber, etc.). Consequently, the corresponding certificates must be provided for each version as shown in the chart here below:

METAL TYPES	RELATED CERTIFICATION
MET1 – MET2 – MET3 – MET4 – MET5 – MET6 – MET7 – MET8: standard version	PRINT HPL
MET1 – MET 2: compact version	PRINT HPL STRATIFICATO
MET1 F1 version	PRINT HPL F1 *
MET1 – MET 2 compact F1 version	STRATIFICATO F1 **
MET1 post-forming version	PRINT HPL PF

** ABET LAMINATI also owns a specific certification for the product Serie Metalli F1 issued by LNE and a test report released by German Railways (DB)*

*** ABET LAMINATI also owns a specific test report of the product Serie Metalli F1 issued by German Railways (DB)*

Regarding the cruise ship market, Abet Laminati has obtained the homologations according to MED Directive (Marine Equipment Directive) 96/98 EC for the products belonging to the collections in discussion up to 1.2 mm thickness, as issued by the RINA (Registro Italiano Navale). These products have been approved by the United States Coast Guard (USCG) as specified in such certifications.

ABET LAMINATI

TECHNICAL SPECIFICATION OF “METAL SERIES” COLLECTION

INTRODUCTION

When a new set of colors was added to the “Metal Series” range early in 1996, the latter was reorganized, grouping the colors with similar technical and commercial characteristics in three separate families:

- MET 1 grouping the following colors:
  728-729-731-732-873-874-877
- MET 2 grouping the following colors: 880-881
- MET 3 grouping the following colors: 733-734-735-736-737-738-739

We decided to present the relative information below, using the new structure of colors to differentiate the characteristics of these products. (See next page.)

ABET LAMINATI

Metals – R906 January 2006

SERIE METALLI – METALPRINT - SILVER

GENERAL CHARACTERISTICS

	MET 1 (728-729-731-732-873-874-877)	MET 2 (880-881)	MET 3 (733-734-735-736-737-738-739)
Description	PRINT Laminate made of cellulose fibers impregnated with thermosetting resin and a surface sheet of aluminum, protected by a lacquering process.	PRINT Laminate made of cellulose fibers impregnated with thermosetting resin and a surface sheet of anodized aluminum.	Laminate made of cellulose fibres impregnated with thermosetting resin And a surface sheet of metal (aluminum or copper) protected by lacquering or anodizing.
Machining	Transport, storage, cutting, and drilling are performed as for regular decorative HPL. During all machining stages, the decorative metal surface must be face up. The edges may be finished with a file or sand paper. During bonding in the hot presses the temperature must not exceed 60 degrees C (140 degrees F) and a pressure of 30 - 40 psi (1.5 - 2 kg/cm 2) is recommended. A protective sheet must be used between the press platen and the laminate metal surface. The same type of adhesives (glues) and substrate (cores) used with regular HPL is recommended. **DO NOT APPLY ADHESIVE TAPE TO THE METAL SURFACE.**		
Folding Operation	During bending MET 1 postforming laminates behave differently from regular postforming HPL laminates.	Rigid MET 2 laminates can be postformed; however they behave differently from regular postforming HPL laminates	
	It is not possible to set rules for each type of postforming operation. It is therefore indispensable that the customer should run preliminary tests. Generally, the laminate can be formed on a conventional hot rod HPL postforming machine, but with temperatures lower than regular postforming HPL laminate (approximately 140 degrees C (284 degrees F)). The metal surface must not come into contact with the heating rod infrared lamp. Do not use regular or postforming equipment recommendations.		
		ATTENTION: Only convex bends can be postformed, with the decorative surface face visible.	
	On request and with some finishes the laminates can be supplied with a special peel coat (protective film) which does not need to be removed before the postforming operation.	The panels are supplied with a special peel coat (protective film) that must be removed from around the bend before the postforming operation.	The panels are supplied with a special peel coat (protective film).

ABET LAMINATI

Metals – R906 January 2006

SERIE METALLI – METALPRINT - SILVER

	MET 1 (728-729-731-732-873-874-877)	MET 2 (880-881)	MET 3 733-734-735-736-737-738-739)
Cleaning and Maintenance	The surfaces can be easily cleaned using a soft cloth (or sponge) soaked in warm water and soap. A normal glass detergent can also be used. Rinse well with clean water. After cleaning, the surface must be dried with a soft dry cloth. **Abrasive sponges and detergents, strong alkaline substances, solvents or acids must never be used.**		
Balancing	When these laminates are used to produce composite panels, it is advisable to use the same type of laminate for balancing on the back. If this is not possible, we recommend you run preliminary tests before deciding on the backer to use.		
Color Consistency	Variations of color can occur from one batch to another due to the coating.	Variations of color can occur from one batch to another due to anodizing.	Variations of color can occur from one batch to another due to the coating or anodizing. These variations are particularly evident in type 738 Copper.
Application Limitations	• Suitable for interior applications. • Suitable for vertical applications. • Attention to direction required. • Not recommended for high humidity environments.		

INSTRUCTIONS FOR THE RECOVERY OF COPPER SURFACES (COLORS 737-738-739)

Decorative copper is protected by a high quality cellouse surface lacquer. If the operation is performed incorrectly, the lacquer on the surface can be damaged. Use the following ways to repair said damage:

- **Slightly scratched surface:** delicately dissolve the lacquer with a nitro solvent and clean with a soft cloth.
- **Deeply scratched surface, with damage to underlying copper surface:** dissolve the lacquer around the damaged part using a nitro solvent and rub with steel wool (i.e. Scotch Brite®). After the operation cellulose lacquer must be applied to treated metal surface using a brush.

If the damaged surface is not repaired, the underlying copper may darken (a brown stain will appear). At this point, it will be necessary to remove the lacquer from that part of the sheet completely (with nitro solvent) and to rub carefully with steel wool to recover the metal's original shine. The sheet can then be re-lacquered using a brush or better still, a spray gun.

TECHNICAL SPECIFICATIONS FOR MET 1 AND MET 2

CHARACTERISTICS	TEST METHODS	VALUATION CRITERION	UNIT OF MEASUREMENT	TYPICAL VALUE
Abrasion resistance	EN 438/2.6	Resistance to abrasion	Revolutions	20
Resistance to immersion in boiling water	EN 438/2.7	• increased mass • increased thickness • aspect	% % aspect	6 6 4
Dimensional stability at 20 degrees C	EN 438/2.10	cumulative dimensional variation	%L %T	0.45 0.90
Scratch resistance	EN 438/2.14	load	N	0.5 MET 1 0.1 MET 2
Fade resistance in xenon light	EN 438/2.16	blue wool scale		6
Resistance to dry heat at 180 degrees C (values only valid for MET 1)	EN 438/2.8	variations in aspect • brilliance • other attributes	 degree degree	 3 4