



A Bemis Company

# Railway Interiors Expo 2010 Presentation

By MACTac Asia Pacific



P E R F O R M A N C E   G R A P H I C S  
I M A G i n<sup>®</sup> • M A C m a r k<sup>®</sup> • P E R M A C O L O R<sup>®</sup> • M A C s c r e e n<sup>®</sup>



# Bemis Organisation

US Listed Fortune 500 Company

**BEMIS**®

Flexible  
Packaging  
Materials



Self-Adhesive  
Products



# MACtac Organisation

**MACtac  
PRESSURE  
SENSITIVE  
ADHESIVES**



**European Zone**



**American Zone**



With more than 50 yrs manufacturing experience in pressure sensitive films



A Bemis Company

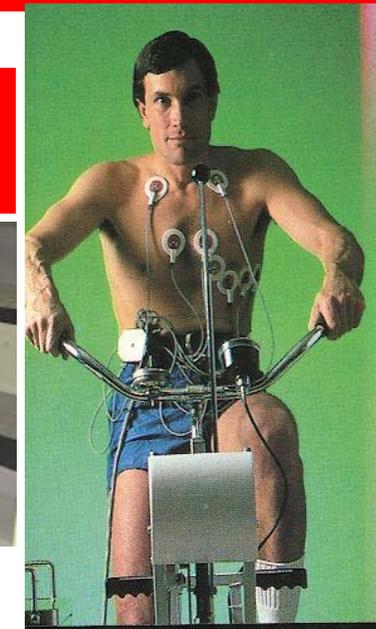
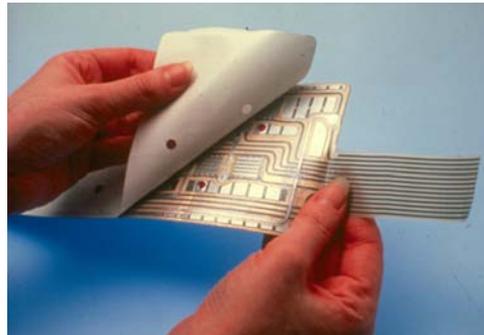
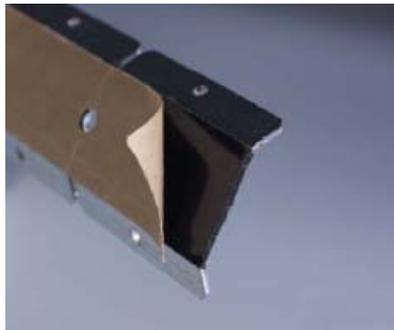
# MACtac®: Technical Products



MACfoil  
Insulation

MACbond – MACmount – MACtouch  
Bonding – Mounting – Electronics

Specialties  
Medical – Safety



# BU Graphic & Decorative

Plotter cutting films



Screen printing films



Specialities



Digital printing films/papers  
+ protective films



# MACtac Organisation



Research & Technology Center



Application Training Center

- MACtac's philosophy
  - continue to innovate & introduce new products while finding ways to improve current applications and uses



Digital Printing & Profiling Center

# Graffiti: Is it a form of art or a form of vandalism ?



# Complex SAG 500: coach body protection film



- **Application of Complex SAG 500**
  - treatment of surface against rust ; deep scratches & knocks
  - Ensure flat surface
  - Application of strips of colored films

# Complex SAG 500: coach body protection film



- **Application of Complex SAG 500**

# Complex SAG 500: coach body protection film



- **Application of Complex SAG 500**

# Complex SAG 500: coach body protection film

- **Safe and easy graffiti removal**
- **Cost effective**
- **Shorter downtime**
- **Matching livery colours ( corporate stripes )**
- **Very high gloss finish**
- **Easy cleaning & maintenance cum repair**
- **Easy film removal with minimum adhesive residue**

# Complex SAG 500: coach body protection film



# Complex SAG 500: coach body protection film



Italy - FS

# Complex SAG 500: coach body protection film



Italy - FS

# Complex SAG 500: coach body protection film



**SAG 500 –  
Corporate  
Livery  
Colors**



**China Guangzhou MRT**



**Asian Games  
Graphics with  
Digitrans onto  
SAG 500**

# Public Transportation



Malaysia LRT Train exterior & interior

# Complex SAG 500: MACTac experience



Holland - Nedtrain

# Complex SAG 500: MACTac experience



# Complex SAG 500: MACTac experience



**Belgium - SNCB**

# Complex SAG 500: coach body protection film



Germany - Connex

# Complex SAG 500: coach body protection film



Germany - DB

# Complex SAG 500: coach body protection film



Holland - Nedtrain

# Complex SAG 500: coach body protection film



# Complex SAG 500: coach body protection film



Germany - BVG

# Complex SAG 500: coach body protection film



Holland - HTM

# Complex SAG 500: coach body protection film



Italy – Trenitalia  
(Alstom)

# Complex SAG 500: MACTac experience

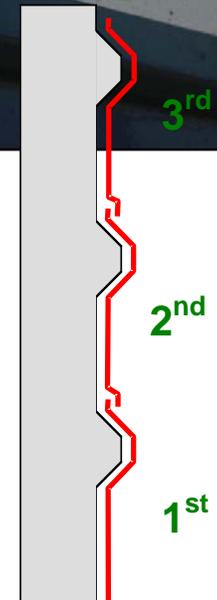


**Denmark – DSB  
(Ansaldo Breda)**

# Complex SAG 500: MACTac experience



# Complex SAG 500: MACTac experience



**! Difficult surfaces !**

# Complex SAG 500: MACTac experience



**! Difficult surfaces !**

# Interior Train Coaches

SAG applicable for both exterior and interior surfaces of the train

- M1 Class Test Standard ( French )
- US Flamability Test Class 1
- BS Toxicity Test for Underground
- German DIN 54 837 Test



# Vandalism inside train coaches



# Vandalism inside train coaches



# A solution : Complex SAG 500/SAG 800



**Option to use gloss  
or matt finish for the  
interiors of train**



# A solution : **Complex SAG 500 / SAG 800**



**Easy to clean & maintain with SAG 500/800**

# A solution : Complex SAG 500 / SAG 800



# Complex SAG 800: interior protection film



# Complex SAG 800: interior protection film



# Public Transportation



**KUALA LUMPUR MONORAIL**

# Public Transportation



**KL Monorail – Interior Graphics**

# Key Market segment: Glass Mural



**Transparent Film with garden images**



# Permafun Brushed Metal

**PERMAfun** BRUSHED METAL

**NEW!**



**Option to create Brushed Metal finishings on wall interiors  
“visual as well as touch experience”**

# Permaf<sup>un</sup> Coarse Grain Wood

**PERMA<sup>fun</sup>** COARSE GRAIN WOOD

NEW!



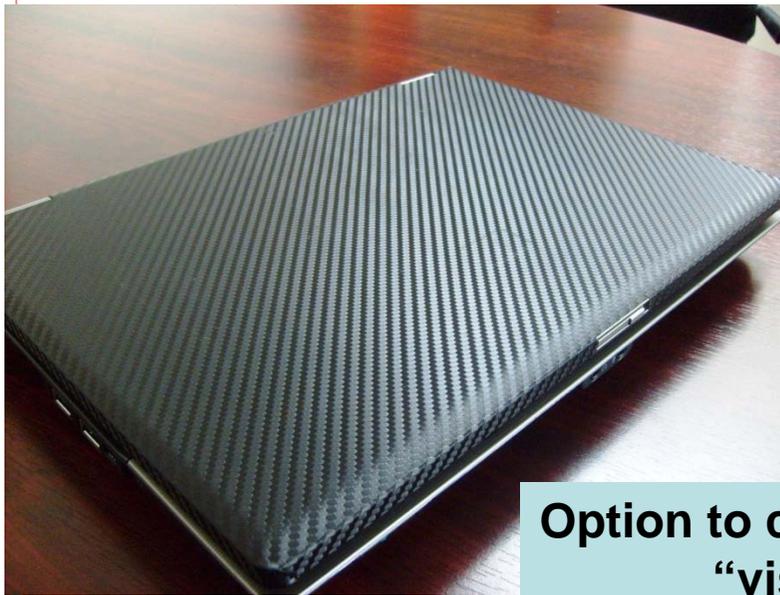
Option to create various wood finishings on wall interiors  
“visual as well as touch experience”

# Permaf<sup>un</sup> Leather Structure



# TuningFilm Carbon Fibre

NEW!



Option to create carbon fibre finishings on wall interiors  
“visual as well as touch experience”

# MACtac Eco-Friendly Products



## JT 5422P (Digital Print)

Cast PP film / Emulsion acrylic adhesive / 100% Chlorine & Phthalate free / Latex & UV printable.

NEW!

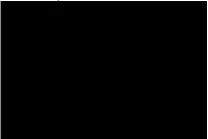


- JT1428 (Digital Print)

100% PVC free / water-based printing inks / emulsion acrylic adhesive

- PG7494/8/9 (Laminating Films)

PP film / emulsion acrylic adhesive / used in combination with JT5422P



- MACal Greenscreen 4827P (Silkscreen)

PP film / emulsion acrylic adhesive / 100% Chlorine & Phthalate free / Cadmium-free / Available in sheets and rolls

# Glass Protection Film

# Vandalism on windows



**Scratches on glass would be permanent  
& require replacing the glass at the  
Terminal - MONEY & TIME Lost !**



# Vandalism on windows



**Poor image for the train company & to mention very distracting for train passengers - SAFETY & IMAGE issues**

# Vandalism on windows

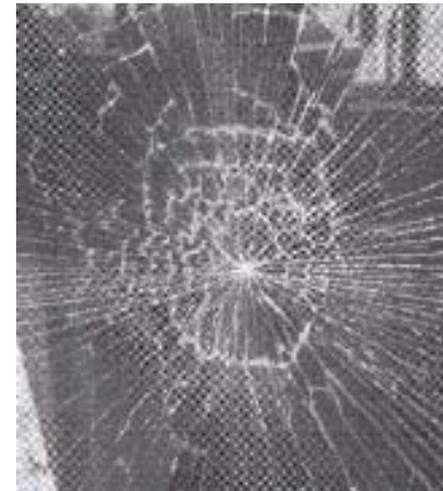


# Window Security Film – Ultra Clear Film

Pressure Sensitive Adhesives

## Benefits

- **Meets official European standard EN 12600 :**  
**test on safety glass (Pendulum impact body test).**  
**Safety Performance:**
  - WFS AS 100 = 2B2
  - WFS AS 175= 1B1



**Protection of passengers against flying glass fragments by holding shattered glass together as well as allowing quick fire escape without razor sharp fragments hanging on the windows**

# Window Security Film – Ultra Clear Film



**Water-Soap application – thereafter ultra-clear effect is maintained**

# Window Security Film – Ultra Clear Film



# Window Security Film – Ultra Clear Film



# Window Security Film – Ultra Clear Film



**Scratches remaining on the film after peel-off  
Glass remain un-scathed.**

# Mirror Application – ultra clear film



Also serve to protect mirrors from shattering & breaking into pieces

# Mirror Application – ultra clear film



**Also serve to protect mirrors from shattering & breaking into pieces**