U.S.-China Low-Carbon City Action Planning and Technology Solutions Workshop

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Company: Dow
公司名称：陶氏化学
Presenter: Austin Gao
演讲嘉宾：高源

About Dow

- Combines the **power of science and technology** to passionately innovate what is essential to human progress

  整合科技的力量，致力于创新，为人类进步助力

- Delivers a broad range of technology-based **solutions** to customers in approximately **180** countries

  为全球180多个国家的客户提供广泛的技术解决方案

- **Integrated value chain** aligned to high-growth sectors such as packaging, electronics, water, coatings and agriculture

  全整合的供应链特别为包装，电子，水处理，涂料和农业等高增长行业提供支持

- **>$40** billion annual sales

  年销售额在400亿美金以上

- Approximately **49,500** employees worldwide

  全球大约49，500员工

- **6,000** product families manufactured at **179** sites in **35** countries across the globe

  全球35个国家的179个工厂提供超过6，000种产品

ERC (Elastomeric Roof Coating)
弹性屋面涂料

ERC - A liquid applied, monolithic, seamless, fully adhered elastomeric membrane formed in-situ on a roof to provide protective and reflective properties.

ERC provides key value propositions:

- Protective properties
- Energy management properties
- Appearance properties
- Solutions for many roofing

弹性屋面涂料是一种弹性无缝的水性功能涂料体系，能牢固地附着于屋面，提供防水和节能。

弹性屋面涂料的关键价值：

- 防水保护
- 节约能耗
- 美观
- 适用性广，容易施工

Why ERC?
为什么需要弹性屋面涂料?

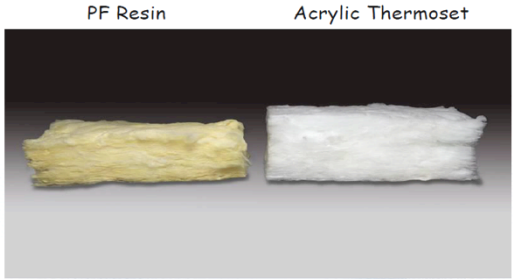
- Easy to apply for renovation on various substrate, at reduced cost
- Extend roof serving life at 8-10 years
- Superior waterproofing
- Save ~20% energy consumption by average (based on different climate and buildings)

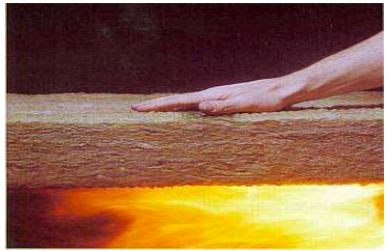
- 施工简便，易于屋面翻新，减低整体成本，可用于修补多种屋面材料
- 至少延长8-10年屋顶寿命
- 具有优秀的防水性能
- 平均可节约20%能源消耗(基于不同的气候区域及建筑类型)

AQUOSET Formaldehyde Free Binder
AQUOSET无甲醛胶粘剂

- Formaldehyde free solution replacing traditional PF (phenol formaldehyde) for glass wool, mineral wool and high performance non-weven
- Environmental friendly waterborne binder with extremely low VOCs
- Excellent thermal insulation
- Superior durability due to high water resistance
- A1 fire resistance

- **无甲醛胶粘剂解决方案，取代酚醛，可以广泛应用于应用于玻璃棉，岩棉和高性能无纺布**
- 水性环保乳液，超低VOC
- 优异的隔热保温性能
- 耐水性能好，使用耐久
- A1防火





LIQUIDARMOR™ Flashing &Sealant
液体装甲密封胶

- **Durable, Sprayable Flashing & Sealing Solution for Protecting the Building Envelope:**
- Easy to Use
- Conforms Easily to Any Shape or Texture
- Adheres to Common Building Materials
- Passes Air & Water Infiltration Wall Assembly Tests
- Meets Building & Energy Codes
- Installed Labor Costs Savings

为建筑提供保护的密封解决方案– 性能持久，方便喷涂:

- 施工方便
- 适用于任意形状，尤其是异形
- 对于多种建筑基材的附着力好
- 通过墙体系统的水气渗透测试
- 满足各种建筑和能耗的法规
- 节约施工人力成本

Waterborne Solution for Running Track & Sport Court
水性跑道和球场解决方案

- Low VOC, no free TDI emission and heavy metal pollution
- Shorter “return to service time” due to low odor
- Better color retention due to better UV resistance
- A total solution including key ingredients, formulation and application know-how to deliver values to all stakeholders throughout the value chain

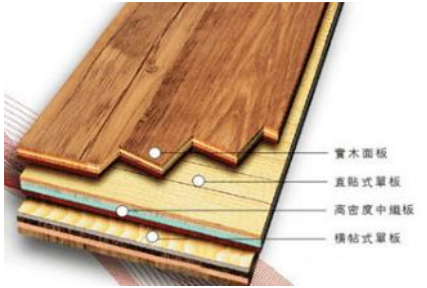
- 低VOCs，不添加TDI和重金属
- 低气味，缩短施工之后的空置时间
- 优异的耐紫外线性能，颜色亮丽持久
- 陶氏为整个产业链提供整体解决方案，包括胶水配方，施工工艺等等附加价值服务

Formaldehyde Free Binder for Plywood (Under Development)
专为胶合板(多层实木)开发的无醛胶粘剂 (开发中)

- Provide a formaldehyde free solution for the whole value chain of plywood industry
  - Formaldehyde free during the whole life cycle of binder production, transportation, wood usage
  - No heavy metals addition
  - Waterborne, extremely low VOCs
- Tailored development for plywood industry
- No change to the current plywood manufacture, leveraging existing equipment- no need capex
- Easy blending when use
- Pass GBT17657和GBT 9846plywood GB codes
  - Superior binding strength
  - 110°C~120°C固curing temptation
  - 4hours open time
  - Excellent workability
  - Tested in multiple plant scale

- 为整个木制品产业链提供无醛添加解决方案
  - 从胶水的生产、运输、储存、多层板生产、一直到最终木制品使用全过程
  - 无甲醛和重金属(如铅、镉、铬和汞等)添加
  - 水性产品，超低VOC，不含苯、甲苯和二甲苯等有毒有害溶剂
- 针对多层实木胶合板工艺定制研发
  - 不改变现有生产工艺，板材生产厂无需投资
  - 现场只需简单混合搅拌，使用方便
- 通过GBT17657和GBT 9846胶合板测试
  - 优异的粘结性能
  - 110°C~低固化温度
  - 4小时优异的开放时间
  - 优异的涂胶初粘性
  - 已经在工业生产线进行多次验证

NAF 美国 CARB 0.2mg/L		NAF 中国 TBC
P2 美国 CARB 0.3mg/L	F4 日本 0.3mg/L	
P1 美国 CARB 0.4mg/L	F3 日本 0.5mg/L	E0 欧洲/中国
	F2 日本 1.5mg/L	E1 欧洲/中国 1.5mg/L



Wrap Up

- ERC (Elastomeric Roof Coating)/弹性屋面涂料
- AQUOSET Formaldehyde Free Binder/无甲醛胶粘剂
- LIQUIDARMOR™ Flashing &Sealant/ 液体装甲密封胶
- Waterborne Solution for Running Track & Sport Court
  水性跑道和球场解决方案
- Formaldehyde Free Binder for Plywood (Under Development)
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DOW®