

# **GLOSCORE PHILIPPINES CONSTRUCTION, INC.**

**Presents**

## **Non-Ozone Depleting Substances Technologies For Polyurethane Spray Foam System in the PHILIPPINES**



**ATMO**  
UN **sphere**  
technology summit  
natural solutions  
3 - 4 June 2013 in Vienna

*“Creating a Greener Future for Climate Protection and Energy Savings”  
on Spray Polyurethane Foam*

**BLOWING SUBSTANCE Technology Trial and Testing**  
Venue : **Romtech Construction Inc. Office/Warehouse**  
Chemical and physical testing were done at **Uratex Laboratory**

**Super Critical CO2 by Achilles Japan**  
March 8-13,2012

**Ecomate by Foam Supplies Inc.**  
December 4-5, 2012

**Solstice™ Liquid Blowing Agent**  
by **Honeywell** in partnership to **BASF**  
December 12-13, 2012



**Gloscore Philippines Construction, Inc.**





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**GLOSCORE PHILIPPINES CONSTRUCTION INC.**

**&**

**ROMTECH CONSTRUCTION INC.**



**WELCOME**

**GUESTS AND PARTICIPANTS**

**TECHNICAL WORKING GROUP (TWG)**

**FOR SECTOR PLAN TO PHASE OUT HCFC-141B IN THE SPRAY FOAM**

**TESTING OF SUPER CRITICAL CO<sub>2</sub> BLOWING AGENT**

**& MODIFIED SPRAY FOAM EQUIPMENT**



*We are responsible to take care of the  
Mother Earth*

**MARCH 8-13, 2012**

**Representatives:**





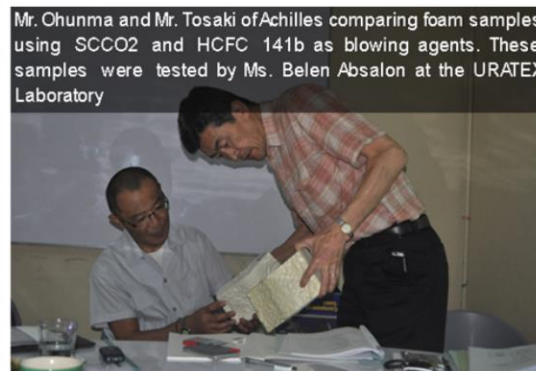
# Super Critical CO<sub>2</sub> by Achilles Corporation Mr. Ohnuma and Mr. Tosaki



The supercritical CO<sub>2</sub> system in operation



Turning on the super critical CO<sub>2</sub> and checking the temperature



Mr. Ohnuma and Mr. Tosaki of Achilles comparing foam samples using SCCO<sub>2</sub> and HCFC 141b as blowing agents. These samples were tested by Ms. Belen Absalon at the URATEX Laboratory



Participants checking the hardness and thickness of the sprayed over supercritical CO<sub>2</sub> foam on a corrugated galvanized iron sheet

## Modified Graco H2035 Proportioner





## Test Methodology in Uratex Laboratory

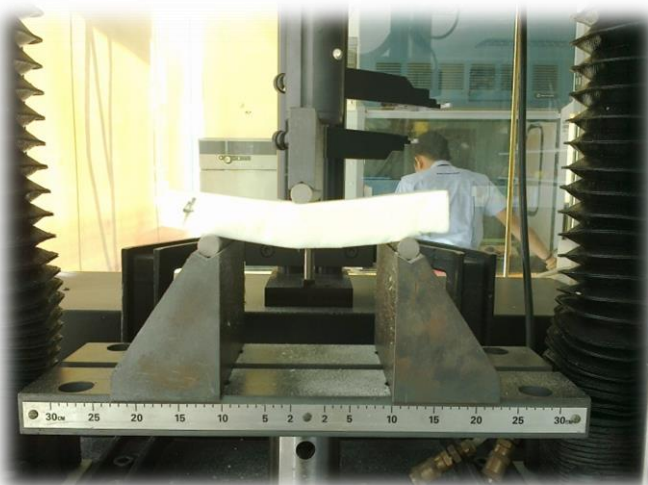
### Density Test



### Hardness Test



### Flexural Test



### Flammability Test





# Physical Testing

## Super Critical CO<sub>2</sub>

### A. Achilles

Physical Properties	Unit	Target Value		using blowing agent in laboratory		Actual foam spray	
		141B	CO <sub>2</sub>	using 141B	using CO <sub>2</sub>	Achilles (2pass)	Romtech (3pass)
Density	kg/m <sup>3</sup>	35 + 10%		47.49	68.89	40.74	47.56
Hardness @ 10% CLD	kgf	n/a		155.98	179.11	154.22	147.98
Flexural Strength	kN	n/a		0.456	0.864	0.116	0.105
Flammability Testing	mm/min	0 (Did not ignite)					





# ECOMATE

Graco E30

Mr. Roy Choudry - FSI







*“Creating a **Greener Future** for Climate Protection and Energy Savings”  
on **Spray Polyurethane Foam**”*

## B. **Ecomate**

Physical Properties	Unit	Sample 1	Sample 2
Density	kg/m <sup>3</sup>	<b>36.91</b>	<b>34.16</b>
Hardness @ 10% CLD	kgf	68.42	34.65
Flexural Strength	kN	0.017	0.010
Flammability	mm/min	Did not ignite	Did not ignite





# Solstice LBA

**By Honeywell (Mr. Ben Lu)**



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**Graco Reactor E30 Spray Equipment**

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## C. Solstice LBA

Physical Properties	Unit	Medium Density	High Density
Density	kg/m <sup>3</sup>	56.72	62.42
Hardness @ 10% CLD	kgf	112.16	143.96
Flexural Strength	kN	0.010	0.020
Flammability	mm/min	0 (did not ignite)	





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## D. Comparative Data Results:

Based on **actual spray foam sample** done at Romtech facilities and **laboratory results of Uratex Company.**

Physical Properties	SSC02	Ecomate	Solstice LBA	HCFC 141B
Density kg/m <sup>3</sup>	40.74	36.91	56.72 62.42	47.56
Hardness @ 10% CLD kg/f	154.22	68.42	112.16 143.96	147.98
Flexural Strength KN	0.116	0.017	0.010 0.020	0.105
Flammability	0	0	0	0
Note: 0 (did not ignite)				



# Evidence of World Global Warming





Your Partner in Building the Green Future..



# GLOSCORE PHILIPPINES CONSTRUCTION, INC.

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# Thank you!..