



DECI-TEX® ACOUSTIC SYSTEMS



I.N.C. Engineered Materials

Melbourne, Australia

John Simmons – General Manager / Director





- ★ Direct acoustics materials supplier to all four car companies in Aust, plus HVAC and Whitegoods industries
- ★ Established 1977 - ***Celebrating 27 years***
- ★ ISO9001, ISO 14002, and TS16949 accredited
- ★ Advanced technologies
- ★ Materials and systems engineering
- ★ **DECI-TEX®** lightweight plant commissioned March 2001
- ★ Purchased Insulform Pty Ltd in December 2002
- ★ New 14,000m² factory opened May 2004



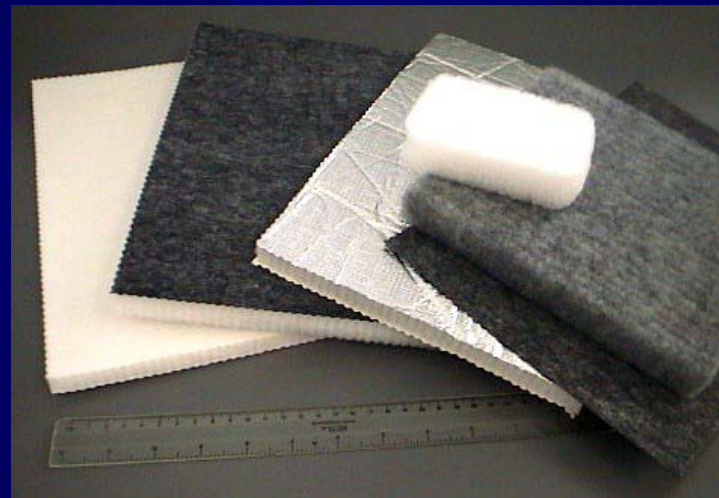
I.N.C. Product Lines

- ★ **ACOUSTIC SYSTEMS**

- ★ **Upholstery Laminates**

- ★ **Textile Laminates**

- ★ **Moulded Trim**



Industry Acclaimed



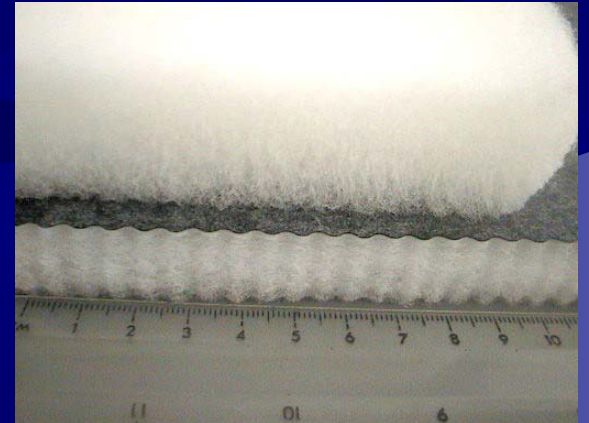
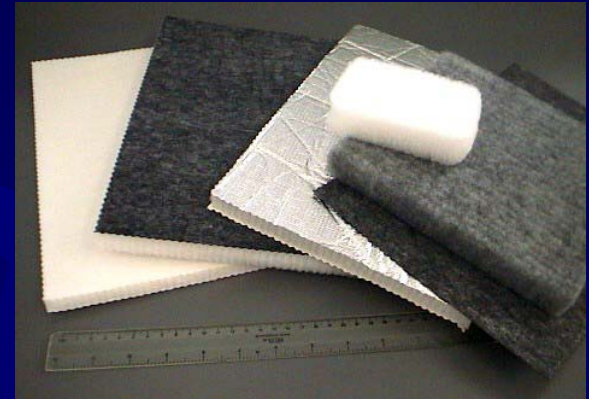
Winner of SAE-A 2002
Automotive
Engineering
Excellence Awards

GOLD Award

I.N.C. Corporation Pty Ltd
'Lightweight Acoustic Trim Systems'

DECI-TEX®

- ★ A family of acoustic materials
 - Fibrous absorbers
 - Flow resistive absorbers
- ★ Moulded insulators
- ★ Flat-cut insulators, adhesive backed



Key Features of DECI-TEX®

- ✱ Higher, more predictable, TUNEABLE sound absorption
- ✱ Lighter in weight than cotton felts, fibreglass and foams
- ✱ Effective vibration isolation / decoupling
- ✱ High load-bearing capacity
- ✱ Fogging-free and Odour-free
- ✱ Can be made from recycled material, and is itself completely recyclable

= Quieter products for less cost, at lighter weight, using less material and less energy

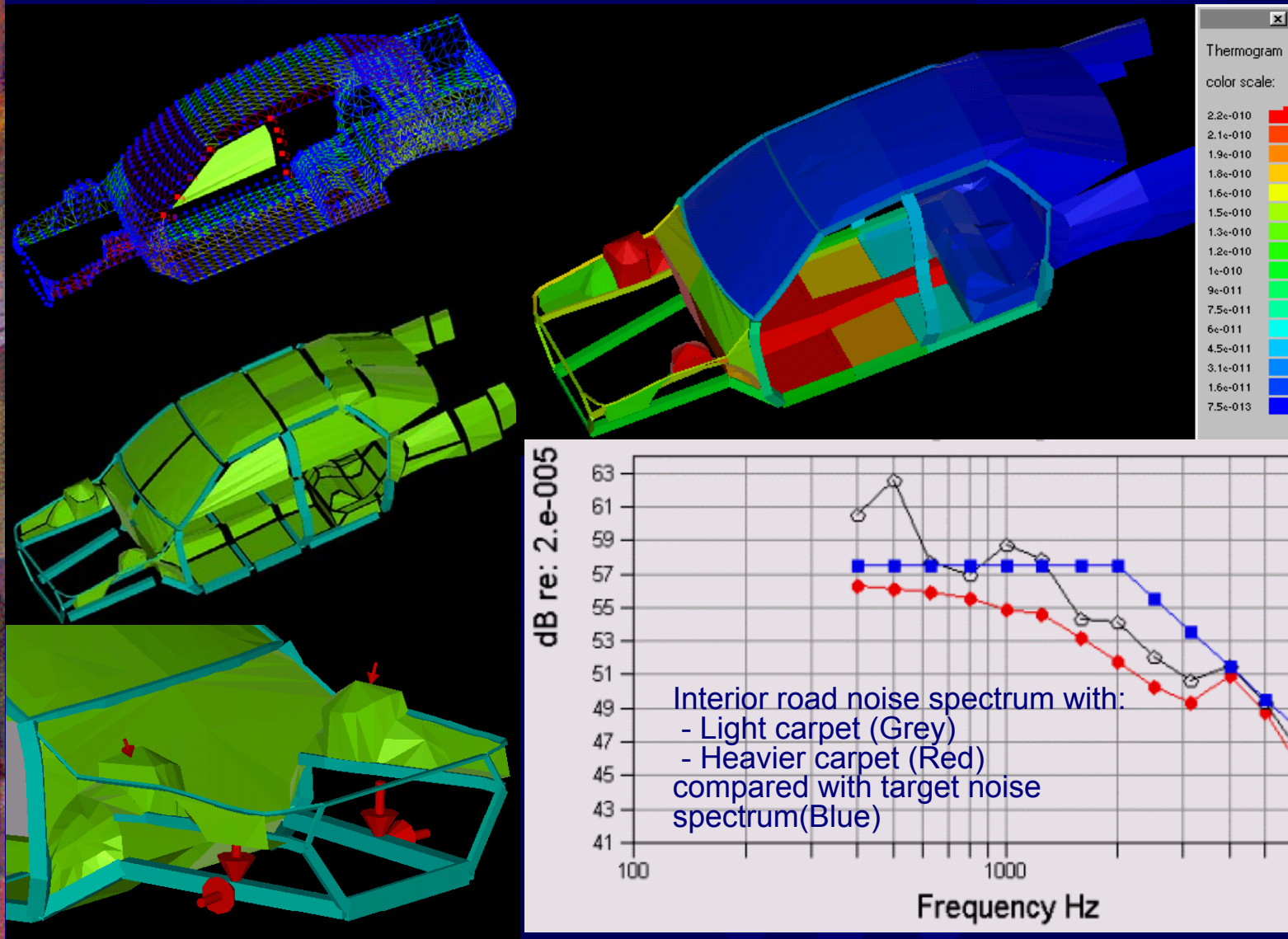
DECI-TEX[®]

inc engineered materials



Acoustic Systems Design

inc engineered materials



Environmental Leadership

- ★ Serious innovation for the environment
 - ★ Recyclable
 - ★ Can itself be made from recycled material
 - ★ Low energy processes
 - ★ Material usage reduction
 - ★ Weight reduction
 - ★ Freight reduction
 - ★ Safe and clean processes
 - ★ Ecological processes

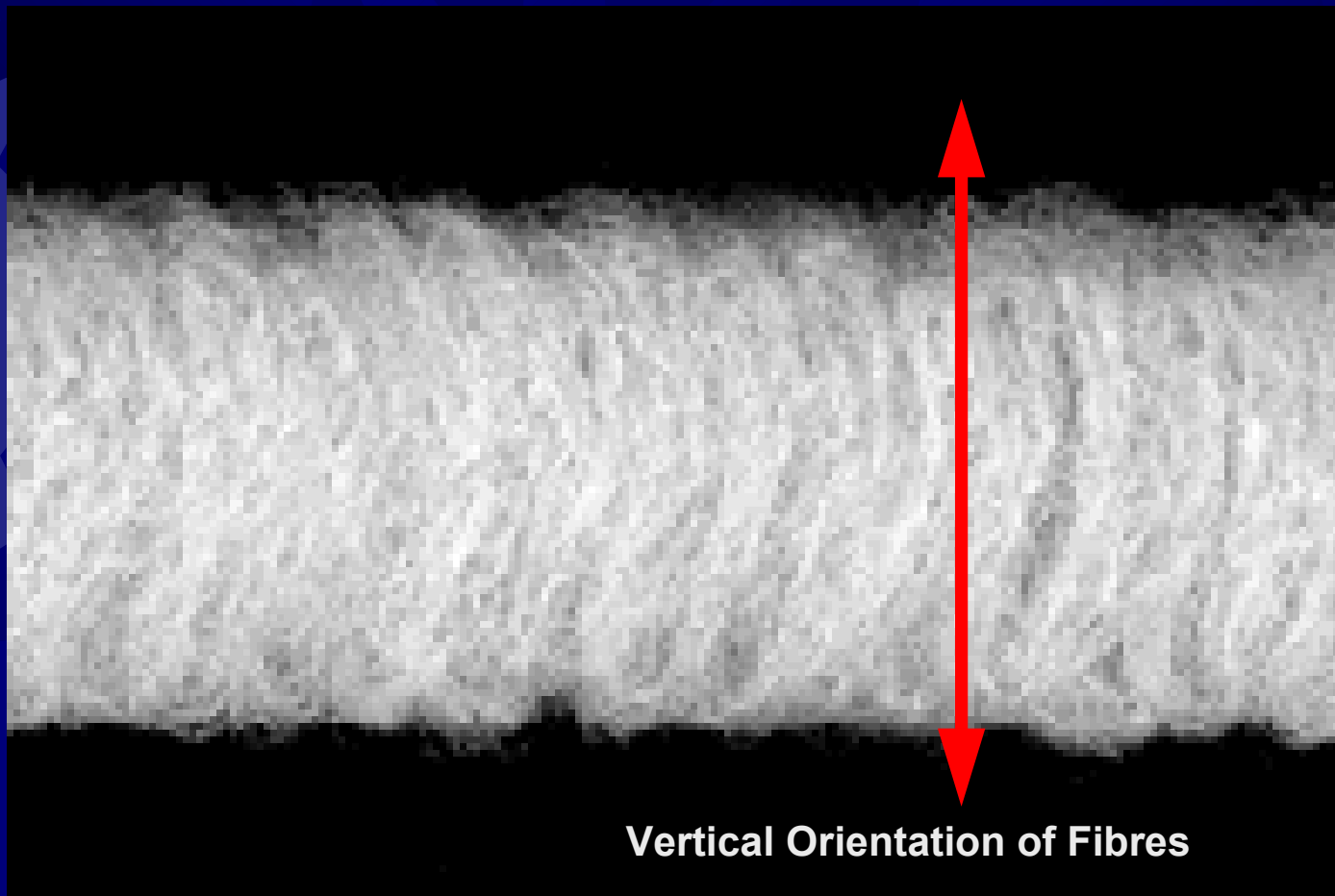


Manufacturing Processes

- ✱ Vertically-lapped fibre blanket production
- ✱ Dry Lamination and Coating
 - ✱ Powder
 - ✱ Film
 - ✱ Web
 - ✱ Hot melt
 - ✱ UV cured PSA coating
- ✱ Cutting and Moulding
 - ✱ Die cutting, CNC cutting (laser, water-jet, reciprocating-blade)
 - ✱ Hot moulding (thermoforming)

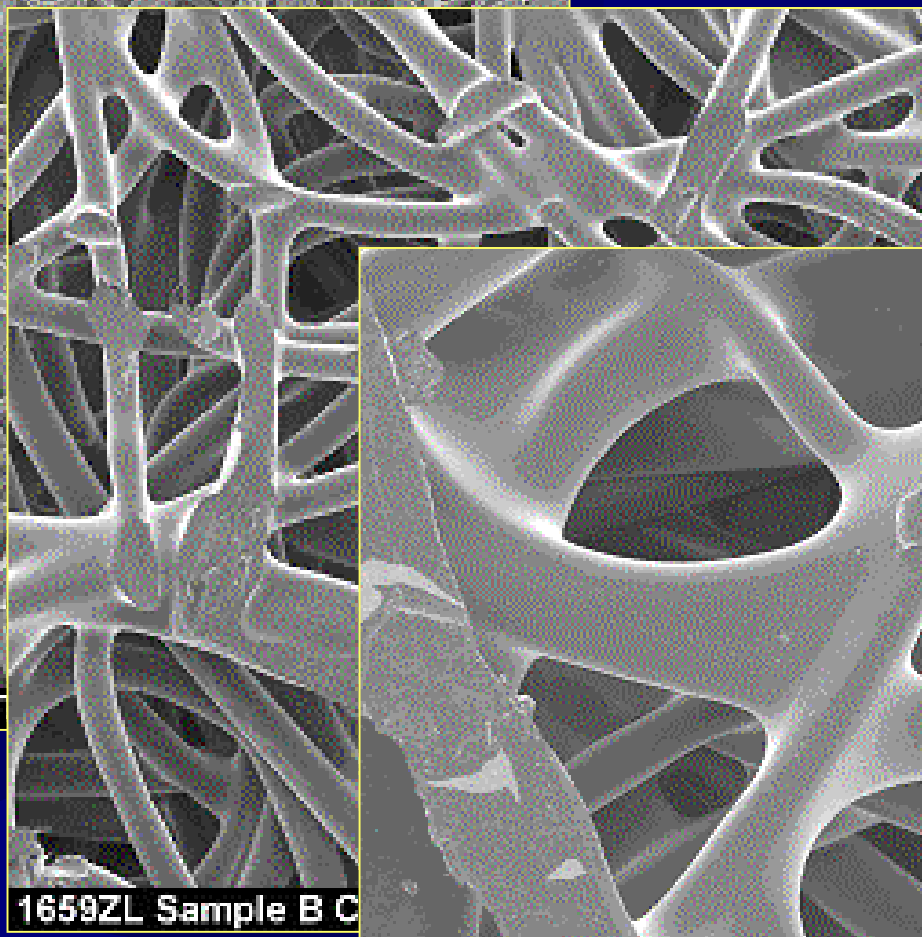
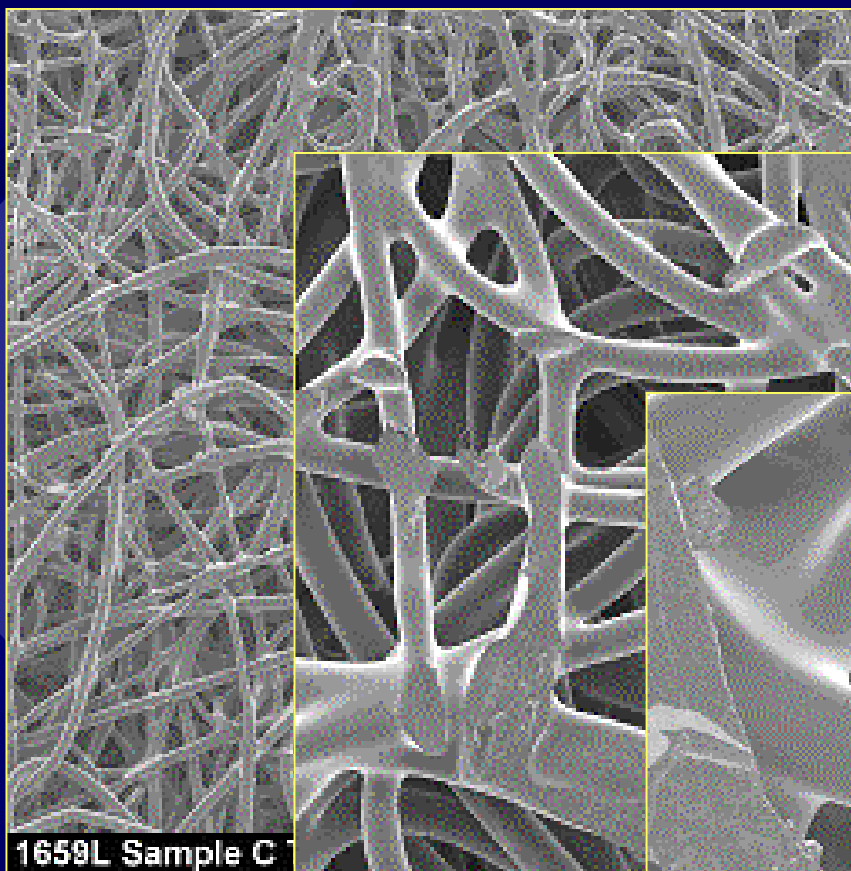
DECI-TEX®

Thermoplastic Fibre Technology



Vertical Orientation of Fibres

SEM's of DECI-TEX[®]



From fibre to DECI-TEX®



DECI-TEX® Moulding



DECI-TEX® Moulding



DECI-TEX[®]

Moulding



Laser Trimming **DECI-TEX®** Dash Insulator – Engine Side)



CAD/CAM cutting



Die cutting



UV-cured Pressure-Sensitive Adhesive Coating



Who uses DECI-TEX® ?

★ A few **DECI-TEX®** users

- Holden
- Pontiac GTO
- Toyota Camry and Avalon
- Mitsubishi Magna, PS41
- Ford 'Territory' SUV
- Kenworth Trucks
- Iveco Trucks
- Fisher & Paykel
- Electrolux Home Products
- Carrier Air-Conditioning



Acoustic Materials

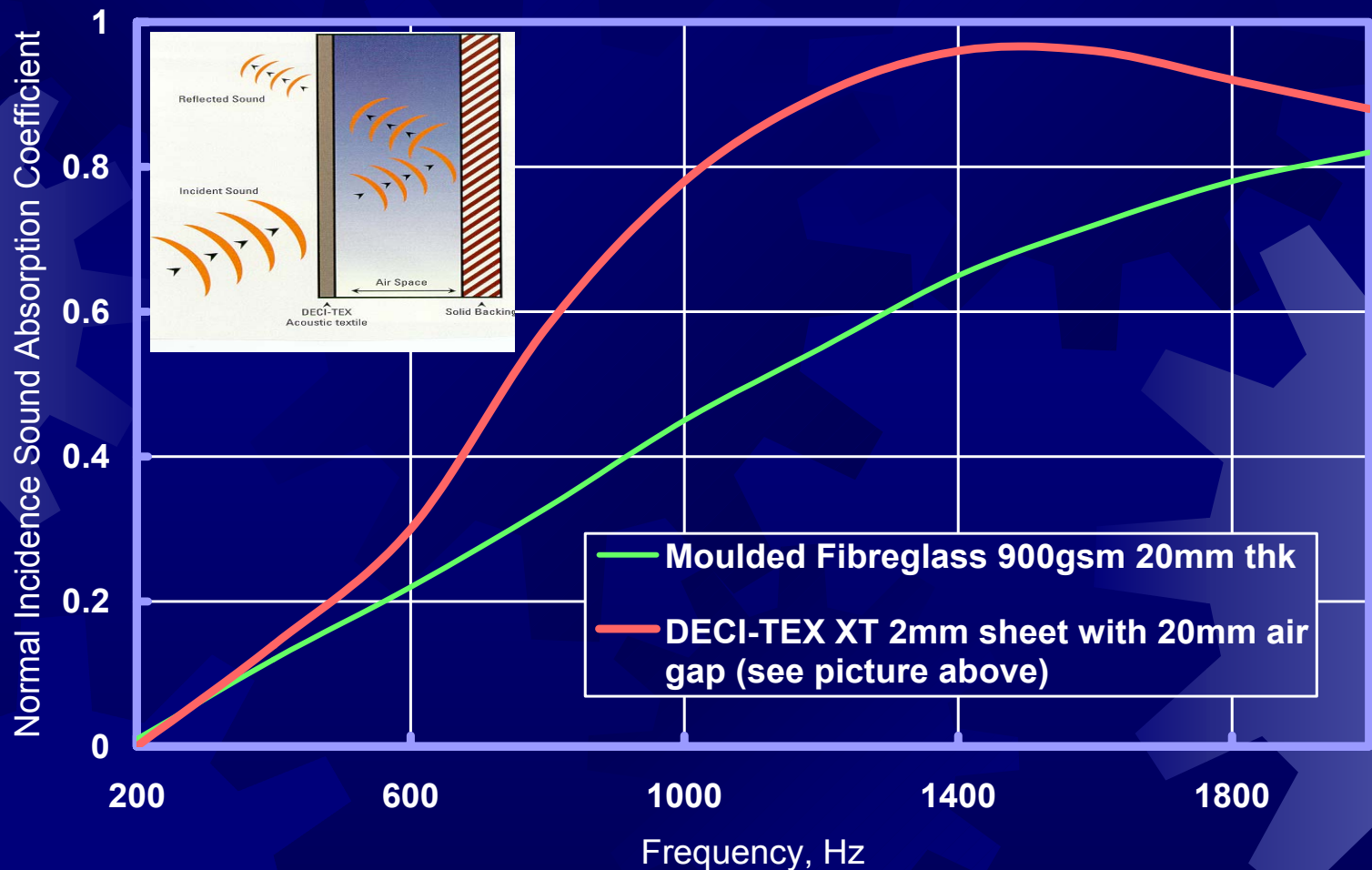
★ OLD APPROACH

- ★ **Sound Absorption**
Proportional to mass.
Low-cost, low-performance scrap fibre felts OR high-cost high-performance PU foams
- ★ **Sound Barriers**
High-mass barriers
- ★ **Vibration Damping**
Bitumen-based

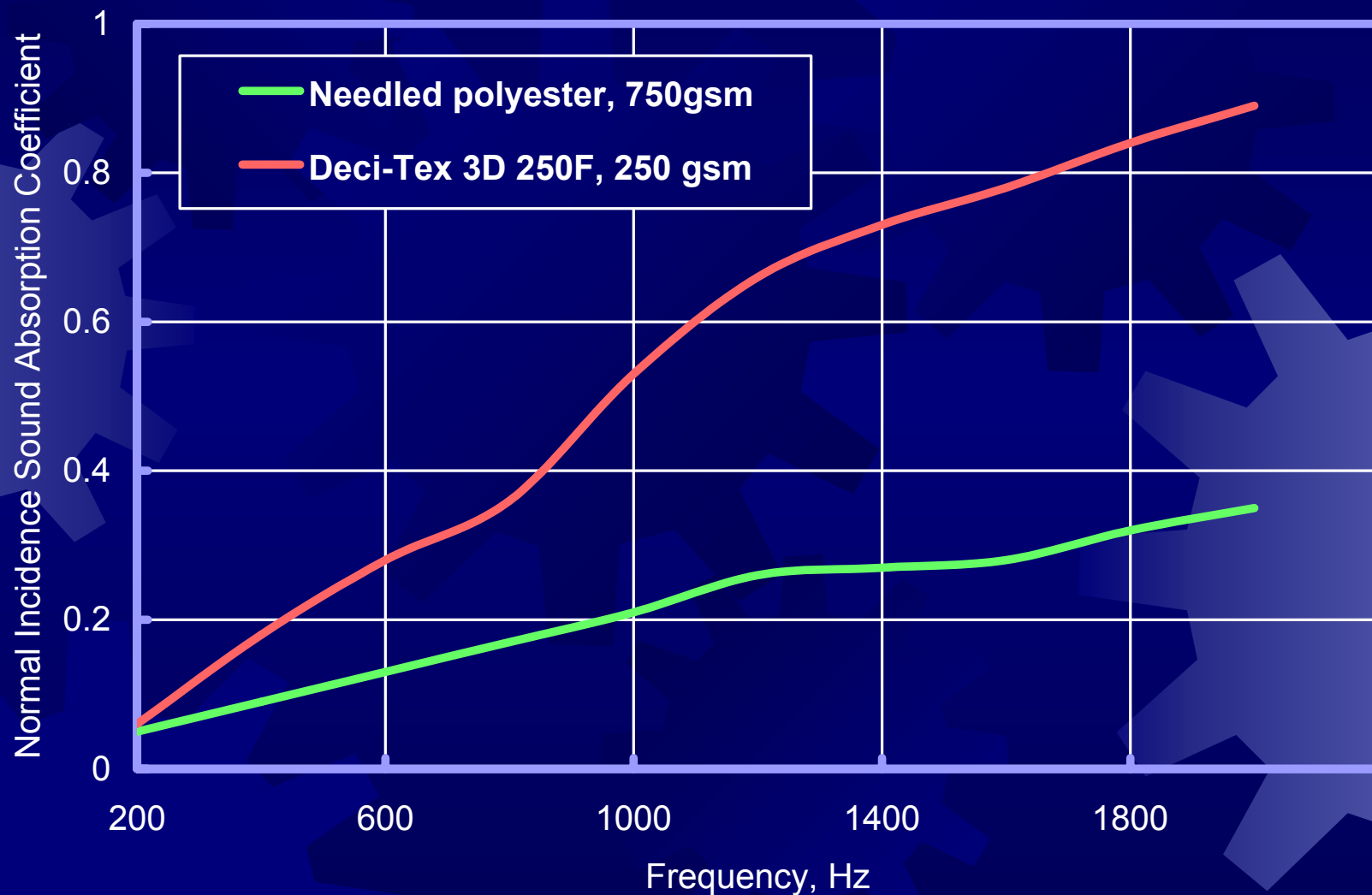
★ NEW APPROACH

- ★ **Sound Absorption**
DECI-TEX® 3D lightweight high-performance absorption
- ★ **Sound Barriers**
DECI-TEX® high flow resistive screens (Ultra-light concept).
- ★ **Vibration Damping**
Visco-elastic materials

Superior Hood Insulator PCT patent application

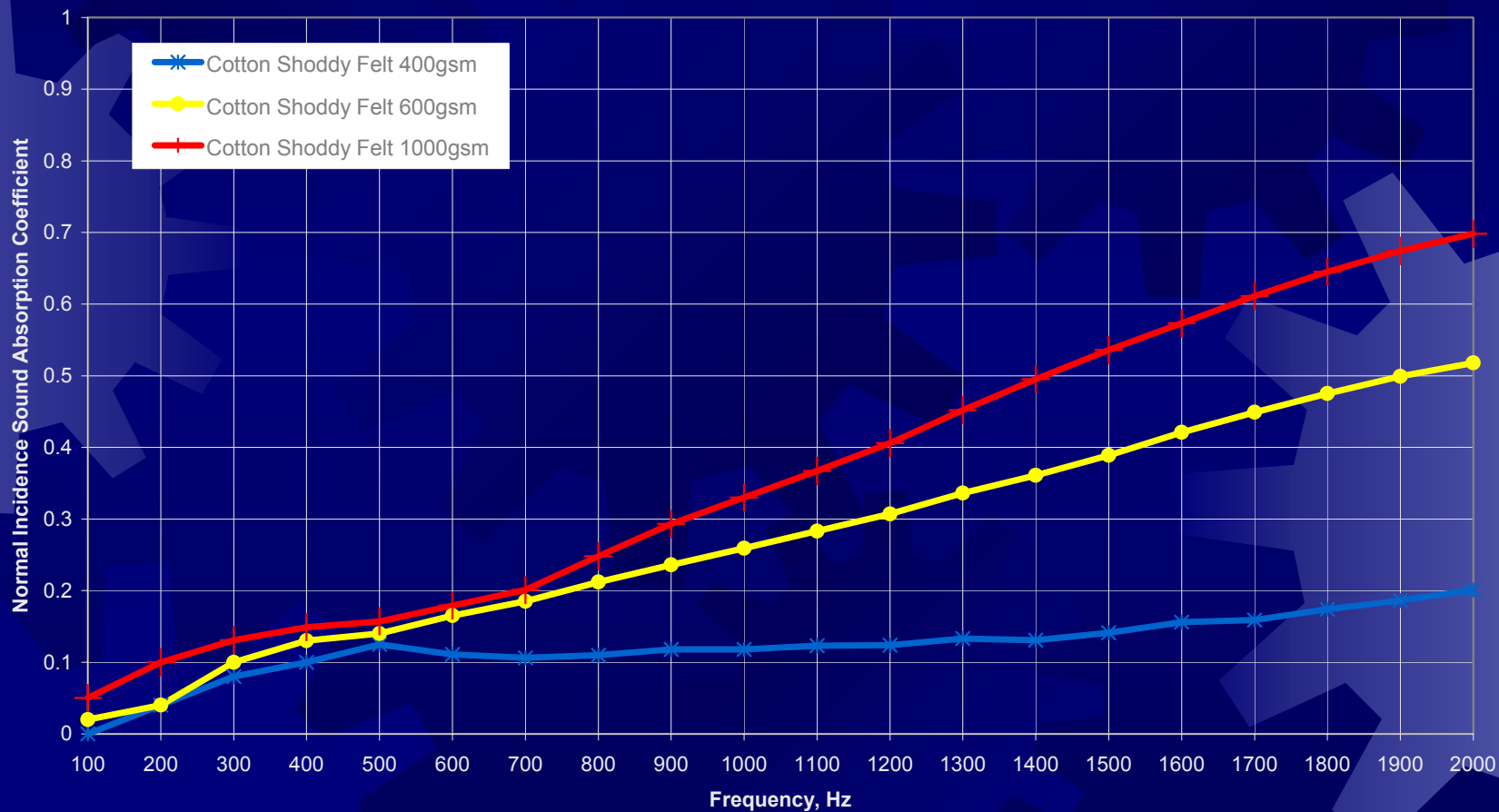


Superior Roof Insulator



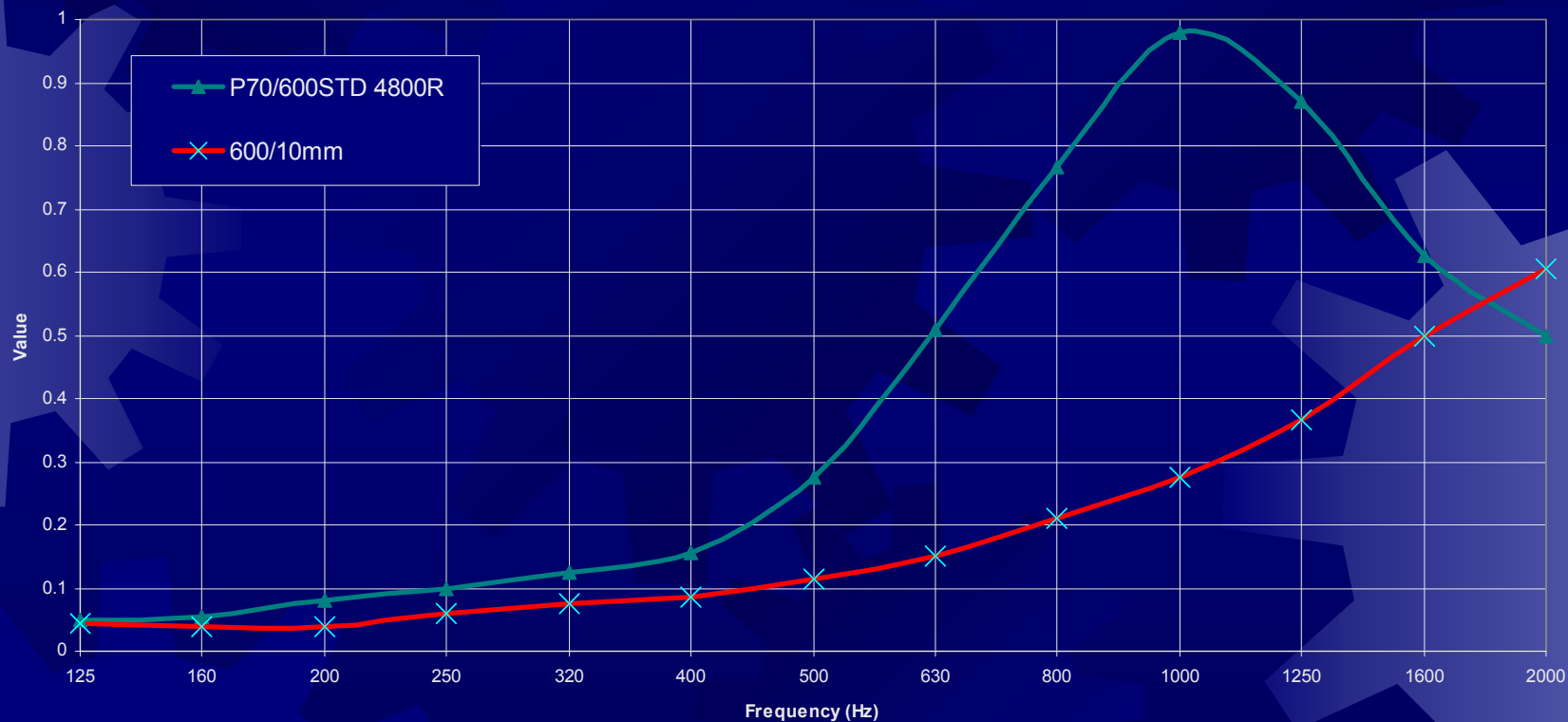
Felt Sound Absorption

Impedance Tube Testing to ASTM E 1050-90/ISO/CD 10534-2
Cotton Shoddy Felt 400/600/1000gsm

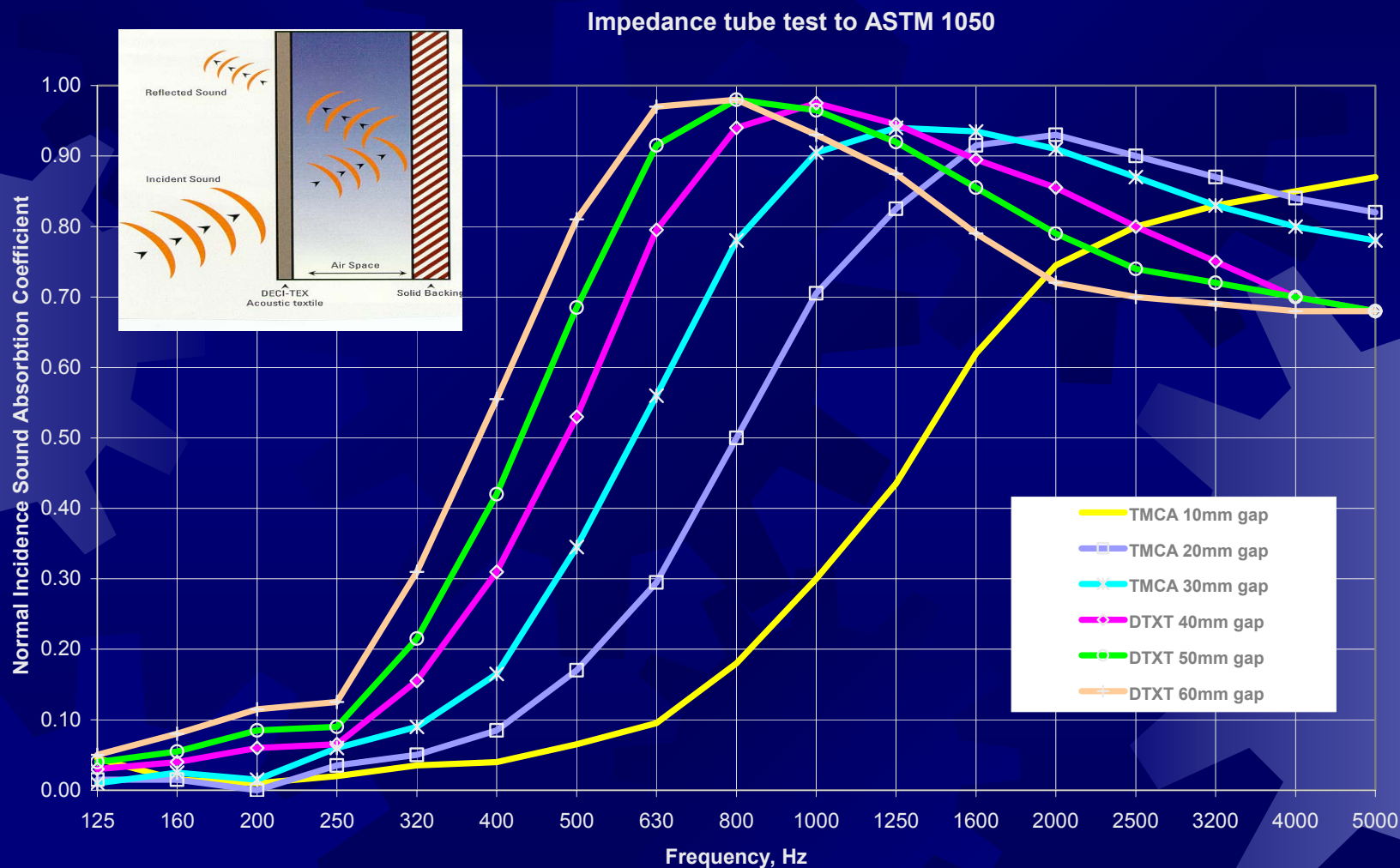


DECI-TEX[®] Enhanced Sound Absorption

DECI-TEX with and without Flow-Resistive sheet

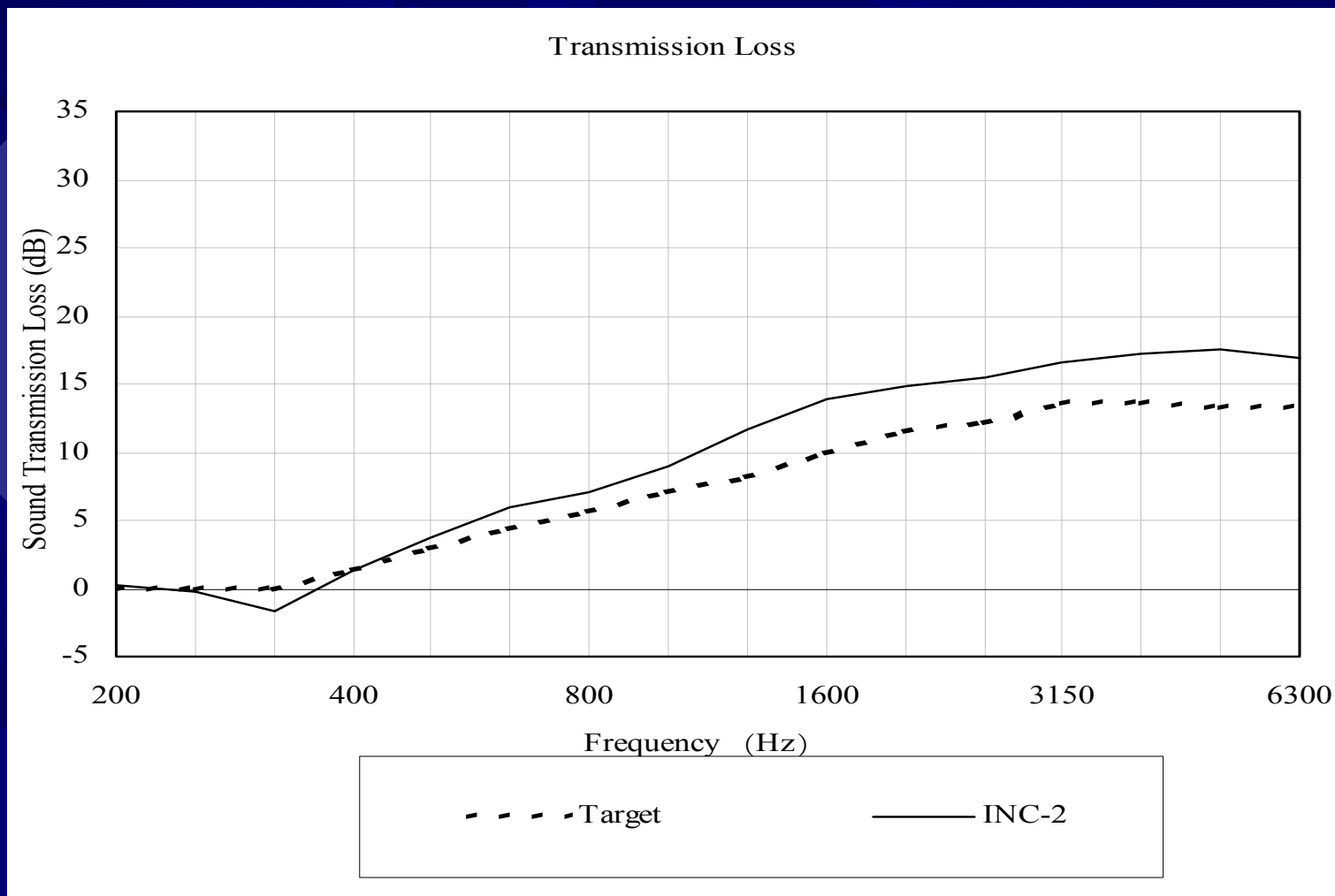


DECI-TEX[®] Tuned Absorption



Flow-resistive Barriers

(25mm 1800gsm)

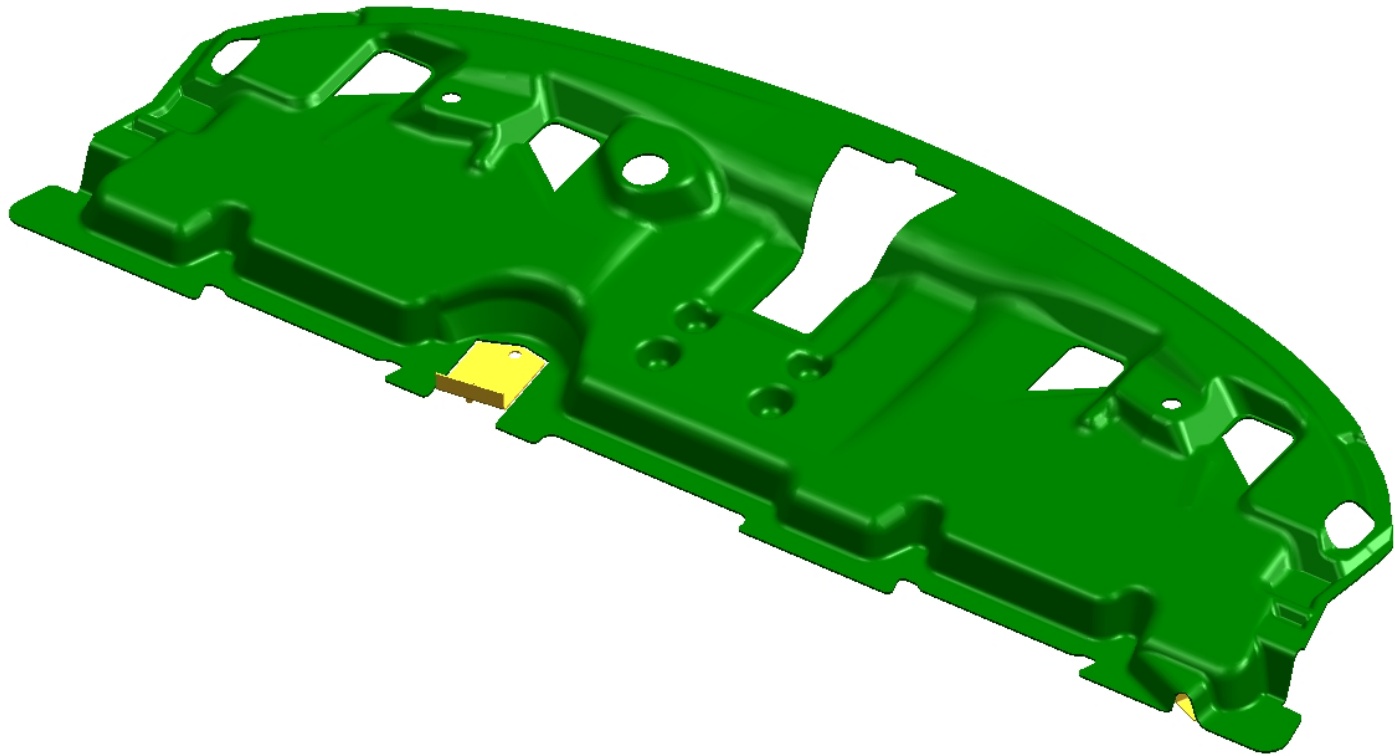


Holden WK Package Tray:

current design (7 acoustic add-ons)



Holden WK Package Tray: CAD design for one-piece DECI-TEX® insulator



TFR-ISO WORK


DECI-TEX® Patent Position

★ DECI-TEX® is subject to Patent Applications pending:

- PCT AU01/00880
- AU 2001272222
- WO 02/09089
- EP 01951239.1
- JP 2002-514711
- KP 10-2003-7000833
- US 2004/0053003
- AU 2004900927



DECI-TEX[®] Innovation Patent


Commonwealth
of Australia

Letters patent
Patents Act 1990

I, Fatima Beattie, the Commissioner of Patents, hereby grant an

Innovation Patent


No. 2003100331
to
I.N.C. Corporation Pty. Ltd. of 22 Cleeland Road, Oakleigh South, Melbourne, VIC, 3167,
Australia
for the Innovation Patent titled
A thermoformable acoustic sheet
invented by Coates, Michael William, and
Kierzkowski, Marek.


This Innovation Patent is granted for a term of eight years commencing from 19 July 2001.
This Innovation Patent can not be enforced unless and until it has been examined by the
Commissioner of Patents and a Certificate of Examination has been issued. See sections
120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

This Innovation Patent claims priority from:

Type of claim:	Number:	Priority Date:	Filed with:
Divisional	2001272222	19 July 2000	AU

Signed and Sealed at
Canberra in the Australian Capital Territory
this 7th day of August, 2003


Fatima Beattie
Commissioner of Patents



Other DECI-TEX® Applications

- ✦ Close-fitting moulded covers / barriers
- ✦ Filters
- ✦ Multi-layer carpet/flooring substrates and/or underlays
- ✦ Seats (acoustically absorptive, flow-through)
- ✦ Acoustically-functional HVAC ducting
- ✦ Trim covers – (Acoustic, Moulded)
- ✦ Formed building acoustic elements





I.N.C.'s strategic position...

- ✦ Full Acoustics Systems integration
- ✦ Specialised supplier to the OE industry
- ✦ Networking with industry partners
- ✦ Global licensed manufacture of DECI-TEX[®] products