

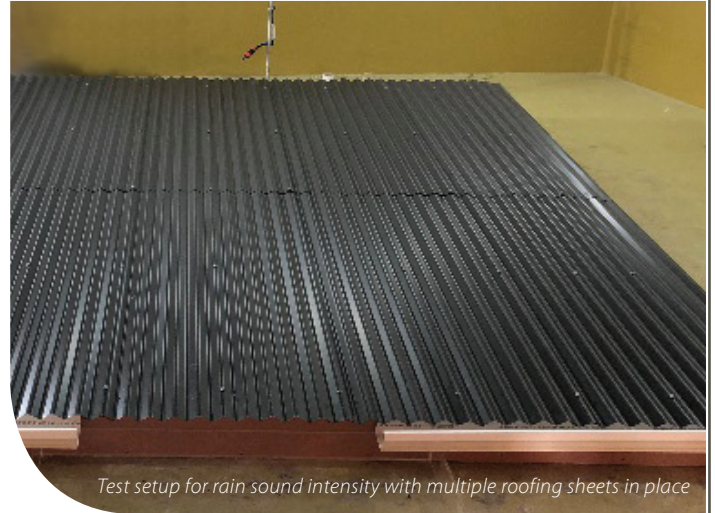


# DECIDAMP SP80 ATTENUATION OF RAINFALL NOISE ON METAL ROOFING

## THE CHALLENGES

Metal roofing is a popular construction material in many parts of the world, particularly in Australia, Asia and other areas of Oceania. With a variety of benefits one disadvantage is its tendency to exhibit excessive noise during events of rainfall. This is primarily due to the minimal internal damping of metal roofing. The net effect is an increase of the noise level experienced within the interior of the building, particularly in the case of high rainfall rates, this can reduce speech intelligibility and cause disruption to activities such as sleep or any task which requires concentration.

Introducing an effective damping compound to highly resonant metal roofing results in the structure being less prone to excitation from rainfall impact, leading to reduction in airborne noise. Decidamp® SP80 has been specifically developed for building and construction use. It is water-based, easily sprayable and exhibits a high damping loss factor. It was tested on performance in this scenario when applied onto the rear side of the roofing panels at a dry film thickness of 1 mm.



Test setup for rain sound intensity with multiple roofing sheets in place



Test setup mounted within a diffusor (shows underside of system and frame)

## THE SOLUTION

The test results revealed that Decidamp® SP80 is highly effective in reducing rainfall noise and increasing transmission loss of metal roofing. With minimum treatment sound intensity has been reduced by 10-11 dB and transmission noise (Rw) improved by 5-6 points. Decidamp® SP80 is a viable solution on it's own or as an element of a more comprehensive system when attenuating rainfall noise on metal roofing.

*Independent testing was conducted to ISO 10140-5 at the University of Auckland. Improvement was recorded over the entire measured frequency spectrum across all results for both airborne and rainfall noise insulation.*

## TESTING SUMMARY

COLORBOND®, 0.42 mm corrugated steel.

COLORBOND® Ultra, 0.48 mm corrugated steel.

*Lysaght Custom Orb design,  
(a sinusoidal wave pattern with rib depth of 16 mm.)*

System	$L_{JA}$ ( $L_{JA\text{norm}}$ )	$R_w$ ( $C; C_{tr}$ )	STC
Standard 0.42 mm corrugated steel	74.3 (68.2)	18 (-1; -2)	18
Standard 0.42 mm corrugated steel + 1 mm Decidamp® SP80	64.1 (58.5)	23 (0; -2)	24
Improvement over untreated	10.2 (9.7)	5 (1; 0)	6
Industrial 0.48 mm corrugated steel	74.6 (68.4)	18 (0; -2)	18
Industrial 0.48 mm corrugated steel + 1mm Decidamp® SP80	63.2 (57.6)	24 (0; -2)	24
Improvement over untreated	11.4 (10.8)	6 (0; 0)	6

**Decidamp SP80 proved to be effective in reducing rainfall noise and increasing transmission loss when applied to the lower facing of corrugated metal roofing at a thickness of 1 mm (dry film thickness).**





## TEST 1 & 2 - STANDARD 0.42 MM CORRUGATED STEEL ROOFING (T1822-1 & T1822-2)

Figure 1: Rain sound intensity (Standard 0.42 mm)

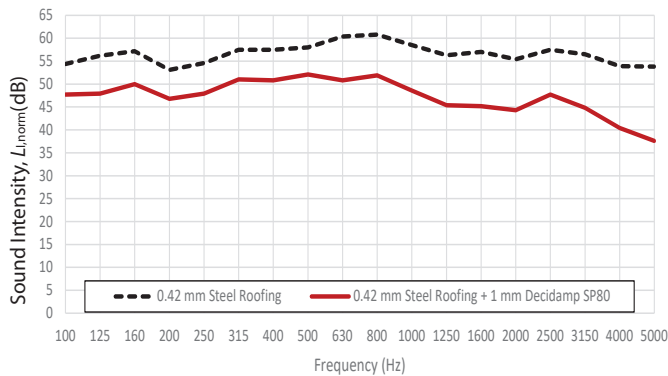
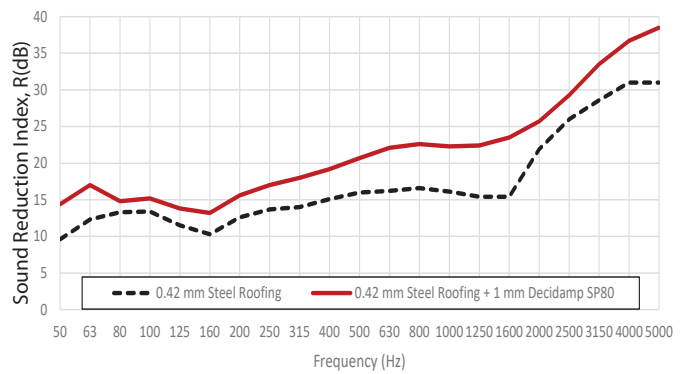


Figure 1: Transmission loss (Standard 0.42 mm)



## TEST 3 & 4 - INDUSTRIAL 0.48 MM CORRUGATED STEEL ROOFING (T1822-3 & T1822-4)

Figure 3: Rain sound intensity (Industrial 0.48 mm)

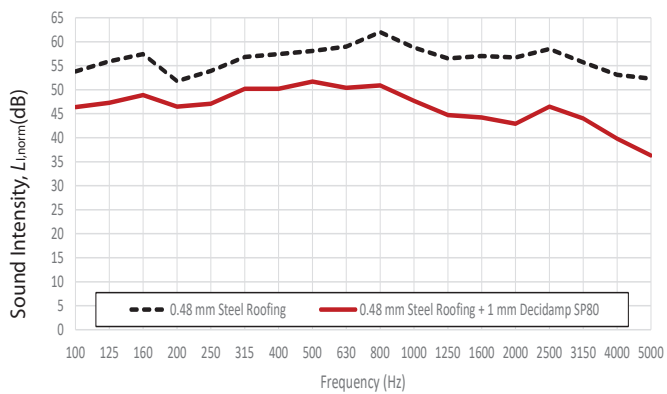
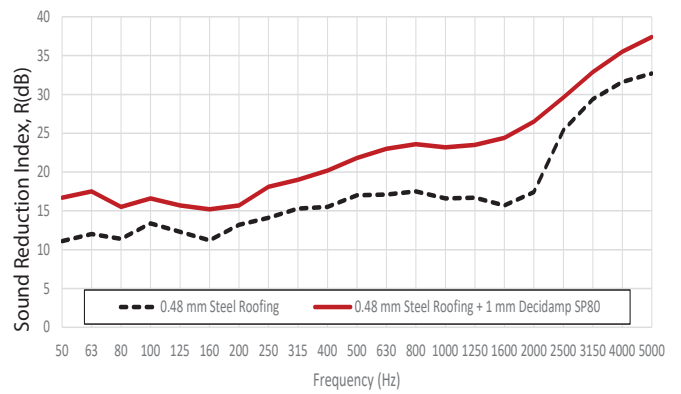


Figure 4: Transmission loss (Industrial 0.48 mm)



Decidamp® SP80 is a viable solution on its own or as an element of a more comprehensive system when attenuating rainfall noise on metal roofing.

