LEWIS®

METAL DECKING

LEWIS® dovetailed metal decking is a selfsupporting, light gauge galvanised steel reinforcement sheet, used for shuttering and reinforcing lightweight concrete or screeded floors of limited thickness

Used in a composite floor construction LEWIS® dovetailed metal decking provides a first class solution for fire protection, acoustic issues and underfloor heating and cooling within floors.

LEWIS® metal decking solutions can be used in a varied range of projects from renovation and conversions to traditional new build, timber frame, off-site system building, modular building systems and mezzanine floors.

Features

- Low dead load from 0.90 kN/m^2
- Floor thickness from 50 mm
- High permissible loads
- Spans of up to 2500 mm
- High impact and airborne sound insulation
- Up to 120 minutes fire resistance
- Easy to install

LEWIS

REPPEL
specialist building solutions

Office 1814, 18th Floor
Tamani Arts Tower
Business Bay Dubai, UAE

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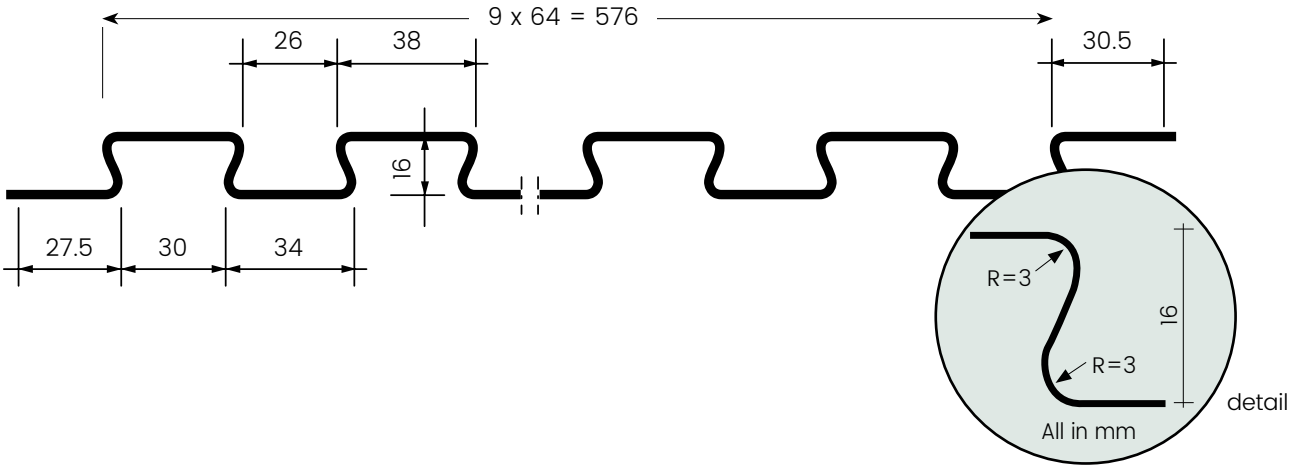
Standard profile (sizes in mm)



LEWIS® Metal decking

The unique LEWIS® profile with its optimal geometry provides a composite action between the LEWIS® deck and the concrete/screed ensuring an extremely high load bearing capacity.

A LEWIS® composite floor consists of the LEWIS® cold rolled steel sheet covered with a relatively thin layer of C20/25 fine grade aggregate concrete or CA25 F4 free flowing, selflevelling, liquid screed. During the curing period the LEWIS® deck acts as shuttering, but once the concrete/screed has cured, locking into the LEWIS® deck it forms an extremely strong, composite, structurally sound floor, i.e. it becomes reinforcement for the concrete/screed. The use of fine grade aggregate concrete can also provide a monolithic finish to provide a "finished floor" option. The overall depth of a LEWIS® composite floor can be relatively thin – 50 mm in most cases.

Fire Resistance

LEWIS® Dovetailed Sheeting makes it possible to design a composite floor meeting the standards without complicated details. Generally a fire resistance of 60 – 120 minutes is achievable with all standard LEWIS® details. Fire tests certification meeting EN 13501-2 are available.

Load bearing capacity

The LEWIS® dovetailed profile has optimized geometry as a result of which the composite action between the LEWIS® metal sheeting and the fine gravel concrete or liquid screed ensures the highest possible load bearing capacity.

LOAD BEARING CAPACITY OF LEWIS® FLOOR SLAB WITH CONCRETE STRENGTH CLASS C20/25

FLOOR SPAN [mm]	FLOOR THICKNESS [mm]	LOAD BEARING CAPACITY (kN/m²)	CONCENTRATED LOAD 50 X 50 mm (kN) •• STANDARD MESH Ø5 - 150 (Q131)*	
			Free edges	No free edges
600	50	30,5	3	5
900	50	19,5	3	5
1200	50	13,8	3	5
1500	50	9,7	3	5
2000	75	6,1	3	5
2500	75	4,1	3	5

* Standard mesh ø5 - 150 (Q131) applied directly on the LEWIS® sheet

** For different concentrated loads please consult REPPEL.

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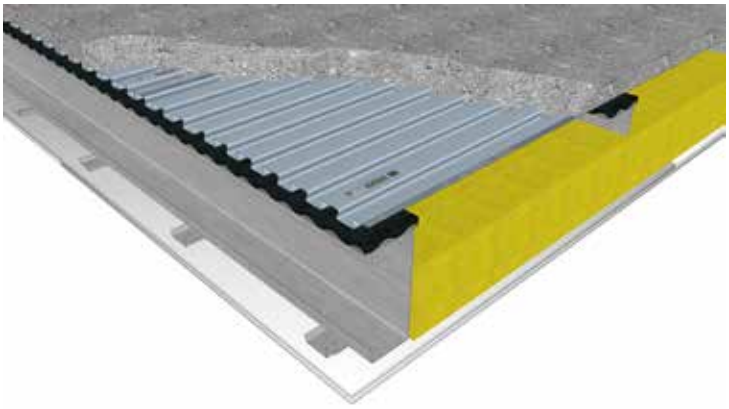
LEWIS® Decking for sustainable floors - roofs - facades

LEWIS® acoustic floors

To improve the acoustic characteristics of the LEWIS® floor system it is possible to create a floating floor by means of using LEWIS® resilient strips under the LEWIS® Dovetailed metal sheeting. The strips can be laid onto the floor boards (over the joists) or directly on the joists.

Light Steel Framing with MTA 15/7



LEWIS® Deck	50 mm (107 kg/m²)
CDM MTA 15/7	15 x 98 mm
LSF C-joists	200 x 100 mm c.t.c. 600 mm
Mineral wool	140 mm
Spring stirrups	27 mm
Gypsum board	2 x 12,5 mm

Airborne sound

R_w ($C_{100-3150}$, $C_{tr\ 100-3150}$) 70 (-3,-9)dB

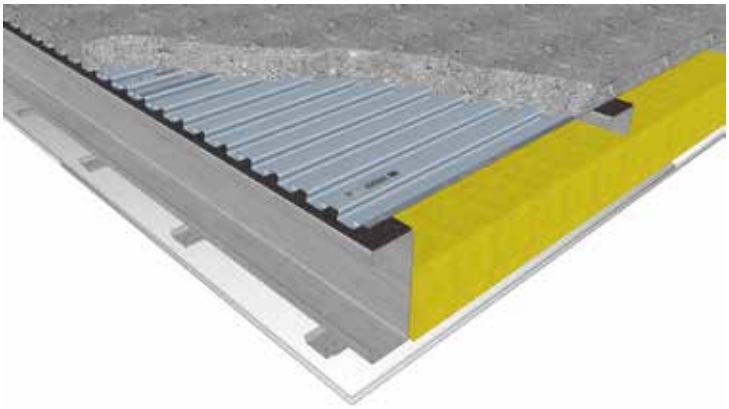
$D_{nT,w}$ + Ctr 57 dB

Impact sound

$L_{n,w}$ ($C_{I\ 100-2500}$, $C_{I\ 50-2500}$) 48 (-3,0)dB

$L_{nT,w}$ 52 dB

Light Steel Framing with MTA 5



LEWIS® Deck	50 mm (107 kg/m²)
CDM MTA 5	5 x 80 mm
LSF C-joists	200 x 100 mm c.t.c. 600 mm
Mineral wool	140 mm
Spring stirrups	27 mm
Gypsum board	2 x 12,5 mm

Airborne sound

R_w ($C_{100-3150}$, $C_{tr\ 100-3150}$) 69 (-2,-8)dB

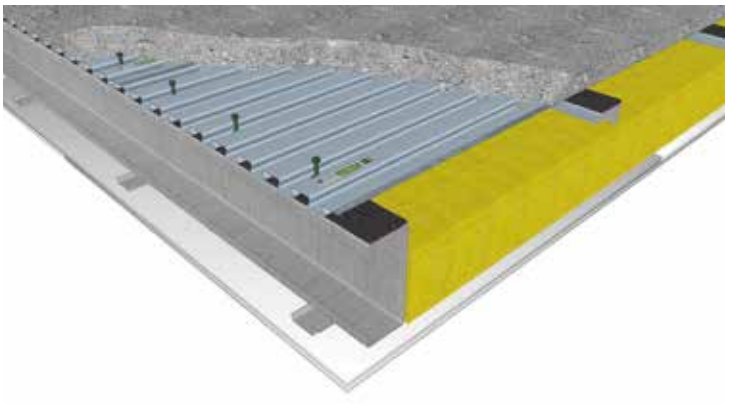
$D_{nT,w}$ + Ctr 57 dB

Impact sound

$L_{nT,w}$($C_{I\ 100-2500}$, $C_{I\ 50-2500}$) 54 (-6,-4)dB

$L_{nT,w}$ 58 dB

Light Steel Framing with MTA 5



LEWIS® Deck	50 mm (107 kg/m²)
CDM MTA 5	5 x 80 mm
LSF C-joists	200 x 100 mm c.t.c. 600 mm
Deck screw fixed to C-joists	
Mineral wool	140 mm
Spring stirrups	27 mm
Gypsum board	2 x 12,5 mm

Airborne sound

R_w ($C_{100-3150}$, $C_{tr\ 100-3150}$) 68 (-2,-7)dB

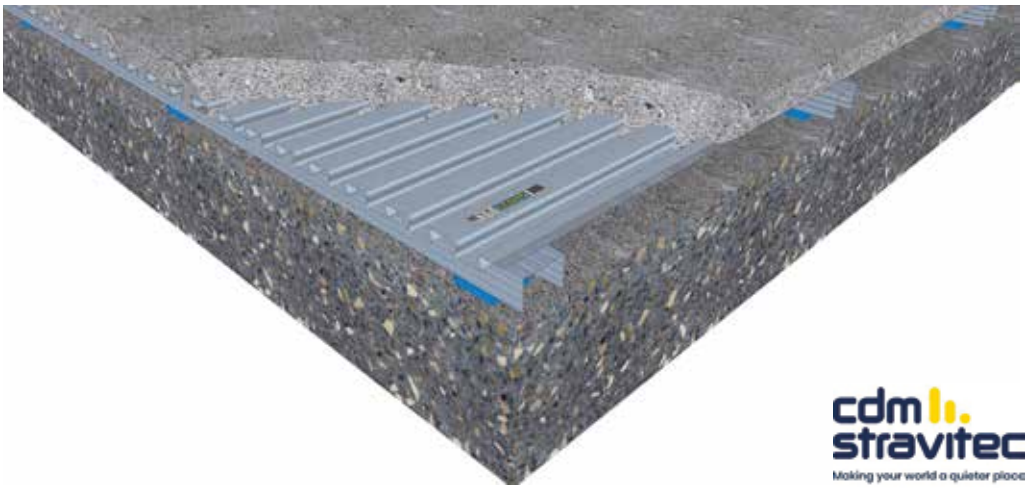
$D_{nT.w}$ + Ctr 57 dB

Impact sound

$L_{n,w}$ ($C_{I\ 100-2500}$, $C_{I\ 50-2500}$) 65 (-12,-12)dB

$L_{nT.w}$ 69 dB

HIGH-PERFORMANCE ACOUSTIC FLOATING FLOOR



Stravifloor Deck

Stravifloor Deck is a low-profile floating floor system using the LEWIS® metal deck for thin concrete pours. The system's high bending stiffness allows for concrete toppings as thin as 50 mm, making this system a great solution for projects that require a low-profile or lightweight concrete floating floor. It is also suitable for areas with high live loads.

This system provides a high-performance floating floor system for excellent structure-borne and airborne noise isolation, while minimizing any impact on the available floor-ceiling height.

System features

- A high performance floating floor system with large support spans (up to 1200 mm).
- The system uses elastomeric isolators with low stiffness/high resilience allowing natural frequencies as low as 6Hz, or springs allowing natural frequencies as low as 2.5Hz.
- Can be changed to meet the project specifications in terms of natural frequency and damping requirements, L_{nw} (IIC) or Rw (STC).
- High bending stiffness specifically for both restricted build-up height and limited extra weight applications.
- The system is compatible with high permissible loads.
- Easy to incorporate underfloor heating or cooling systems.

Auditorium New York University
Abu Dhabi

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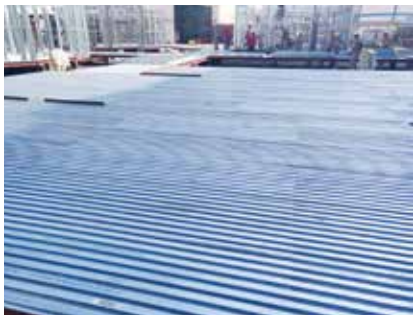
LIGHT STEEL FRAMING

Summercamp for Royal Commision Al Wajh & Yanbu (KSA)
Fabricated and erected in Ajman, UAE






Factory Ras Al-Khaimah

Hybrid structure (hot rolled and cold formed steel with LEWIS® flooring)





Al Wasl fitnessclub Dubai
Hybrid structure (hot rolled and cold formed steel with LEWIS® flooring)



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LEWIS® Decking for sustainable floors - roofs - facades

MODULAR BUILDING

Al Masaood workers residential village.

LEWIS® Deck on LGS joists
Erected in factory Abu Dhabi
concrete on site



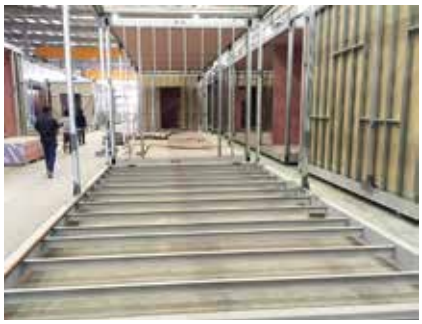


AVITIS INDIA

KEY BENEFITS

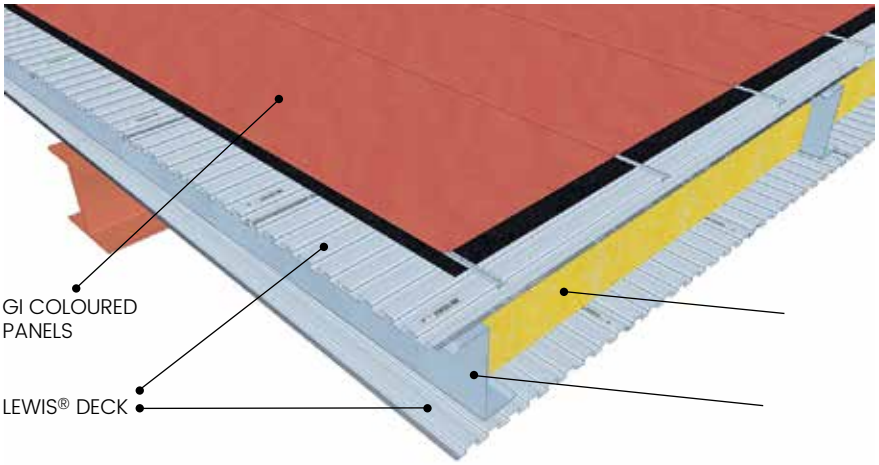
- Less dead load 90 kg/m^2
- Steel savings
  (larger c.t.c. spans of 1200 mm)
- High loads
  Uniformly distributed (10 kN/m^2)
  and concentrated (6.5 kN/m^2)
- Modular






ROOFING

American Academy School
Doha Qatar



LEWIS® dry roof cassette with estimated weight 15 kg/m^2

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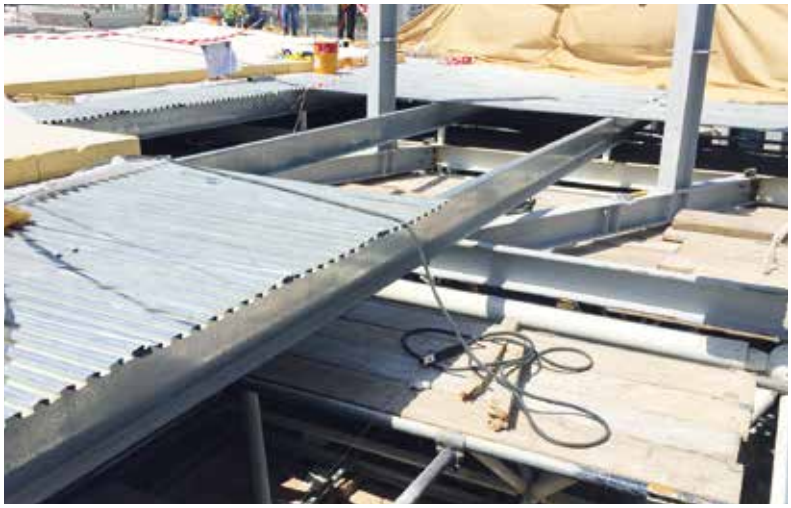
ROOFING

Vox Cinema, Deira City Center
Dubai

LEWIS® 0.5 MM
vapour barrier + PIR boards
mechanical fixed + glued
roof membrane



Gold and Diamond Park DMCC
Al Mas Tower (JTL)
Dubai

Zinc roof with LEWIS® deck
Architectural application of LEWIS® deck with purlins and insulation underneath

FACADE

Al Mutairi villa, Umm Al Sheif
Jumeirah Dubai

Non combustible / termite resistant fixing system, for zinc / copper / stainless steel panels

COPPER CLADDING LEWIS® 0.7 mm

Sa'Adiyaat Beach Club
Abu Dhabi

LEWIS® 0.7 mm
with VM zinc panels

Benefits in facade fixing with LEWIS®

- Dead loads-zinc cladding (10 kg/m^2)
- Wind loads-140/150 km/h
- Fire rating
- Ease of installation
- Ease of fixing
- High contact area

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Reports & Certification

The production facility is ISO 9001 and ISO 14001 certified. LEWIS® Metal decking has been extensively tested. European test reports and test measurements are available. Test data includes a CE marking, Dutch KIWA quality declaration, German Bauartgenehmigung, French and Belgian Avis Techniques.

TECHNICAL DETAILS LEWIS® METAL DECKING

Nominal width	630 mm
Effective width	580 mm
Standard lengths	1220 / 1530 / 1830 / 2000 / 2200 / 2500 mm
Length range	800 - 7000 mm
Dimensional tolerances	length: 1 - 4 mm width : 1 - 3 mm
Moment of inertia	I_X = 3.6 cm^4/m^1
Moment of resistance	W_X = 3.0 cm^3/m^1
Steel gauge	0.5 mm (0.6 en 0.7 mm available on request)
Height of profile	16 mm
Flange width	38 / 34 mm
Weight	0.058 kN/m^2

Steel quality: S320GD + Z100 N-A-C according to EN 10346
Z275 and ZM310 Magnelis® available on request.

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