

# COLOMBIAMAR PRESENTATION

Sikafloor® Marine UltraLight floating floor

Oscar Ovejero, Ing Naval

Sika Services AG



Sikafloor® Marine Ultralight Floating Floor

# EXPERIENCE A REVOLUTIONARY MARINE FLOORING SOLUTION



**POWERED BY SIKA MARINE**

**BUILDING TRUST**



# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## A REVOLUTION IN MARINE FLOORING



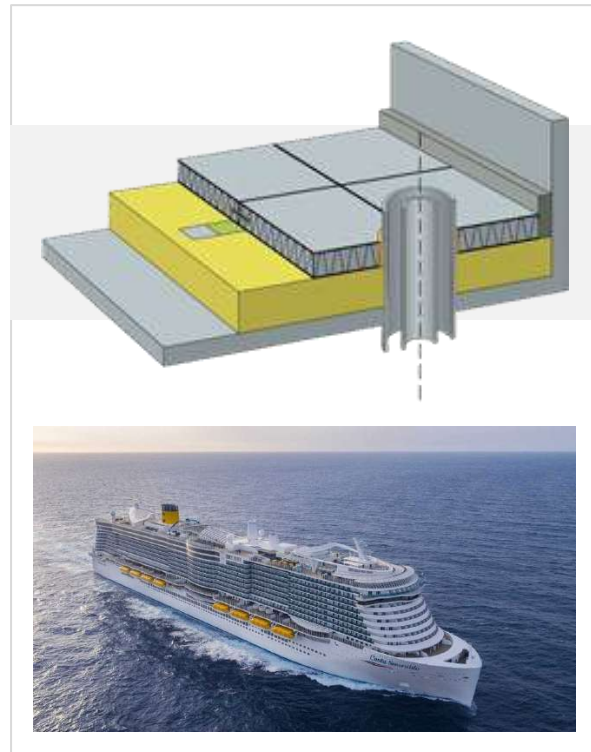
A “Floating Floor” is a floor which is applied on top of an insulation with no solid connection to the super-structure of a ship, which means pipe penetrations, columns, foundations for machinery etc. must be disconnected from the floor system.



The acoustic performance comes from the mass and spring concept, where the insulation is the spring and the top layer is the mass.



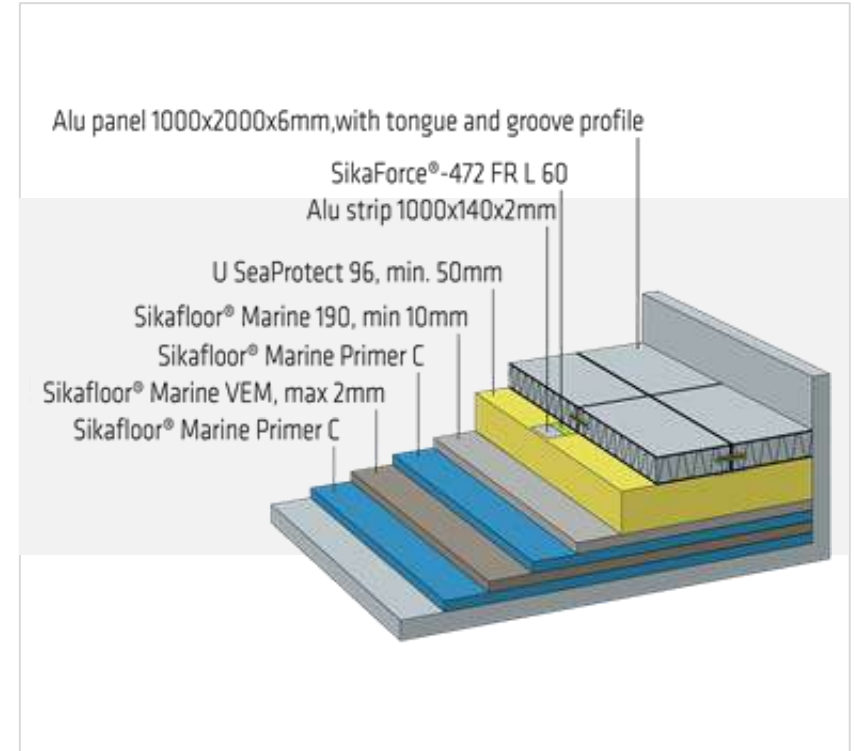
The Sikafloor® Marine Ultra-Light floating floor system comes in two different versions where the only difference is the type



# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## A REVOLUTION IN MARINE FLOORING

- » Components.
- » Levelling system.
- » Fire tested and approved - A60.
- » Acoustical insulation.
- » Vibration damping.
- » Decorative floor covering, carpet or vinyl



# SIKAFLOOR®MARINE ULFF 6

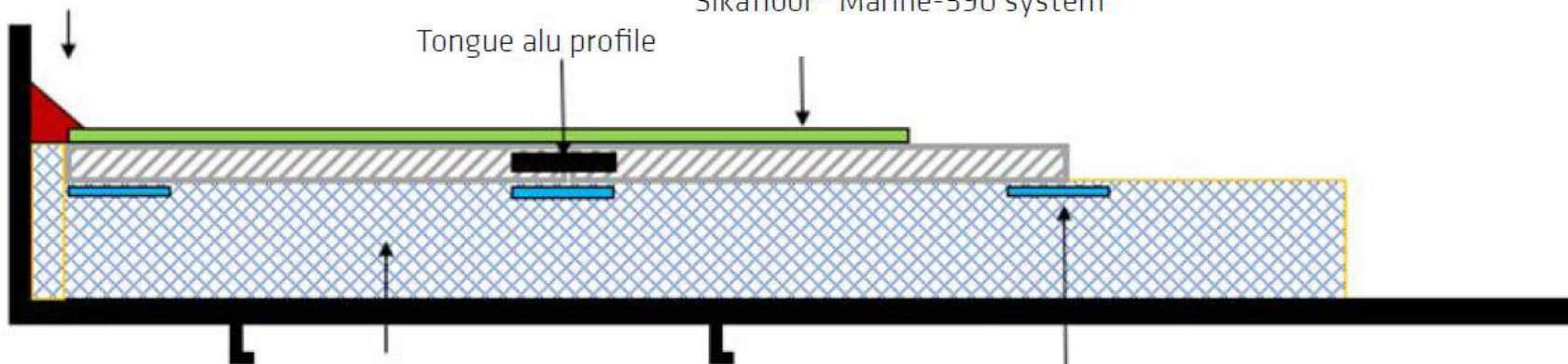
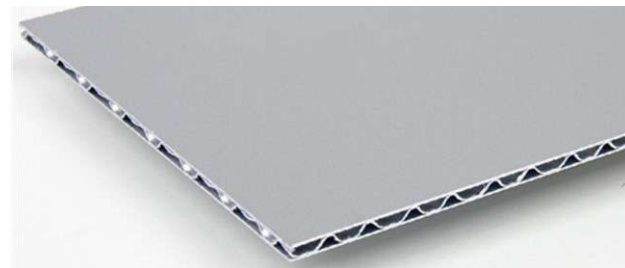
Watertight flexible sealant  
Sikaflex®-591

Sikafloor® Marine-590 system

Tongue alu profile

Isover U SeaProtect 96, 50 mm  
Rockwool SeaRox 436, 50 mm

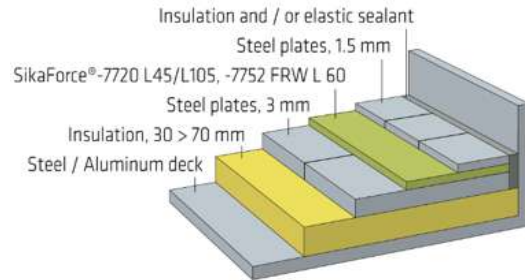
Alu strip 2 x 140 x 2000 mm  
SikaForce®-472 FR L 60



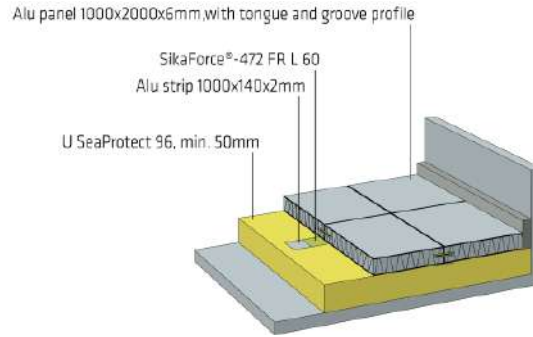
# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## A REVOLUTION IN MARINE FLOORING

### STEEL FLOATING FLOOR



### ALUMINUM FLOATING FLOOR



### COMPARISON

- Weight : 46,3 kg/m<sup>2</sup>
- Acoustic performance  
Rw = 60 dB
- High transport and installation cost

- Weight : 14,85 kg/m<sup>2</sup>
- Acoustic performance  
Rw 58 dB
- Transport and installation cost savings

- savings up to 33 kg/m<sup>2</sup>
- Similar acoustic performance
- Suitable for cruise ship building
- Up to 2,5 tons cabins weight tested

# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR A REVOLUTION IN MARINE FLOORING

## Costa Smeralda

- » Independent study
- » Comparative
- » Sikafloor Marine Litosilo Steel  
vs  
Sikafloor Marine ULFF



# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## A REVOLUTION IN MARINE FLOORING

- » Independent study by **GSR Service GmbH**
- » Replace steel with aluminum floating floors
- » Costa Smeralda (2019)
- » 6<sup>th</sup> largest cruise ship
- » 185.000 Gross Tonnage (Overall Internal Volume)
- » 20 decks
- » 337 meters length
- » 42 meters wide
- » > 6.500 people on board (passenger + crew)
- » > 40.000 m<sup>2</sup> floating floor on board
- » > 17.000 m<sup>2</sup> floating floor identified as suitable



# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## BUILDING A SUSTAINABLE FUTURE

### FUEL

**1 TON**

LESS FUEL CONSUMPTION A DAY

### STEEL

**560 TONS**

WEIGHT SAVING

### CO2 FOOTPRINT

**1550 TONS / YEAR**

LESS CO2 EMISSION

» Independent study based on latest cruise ship class.

» Whitepaper

# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## BUILDING A SUSTAINABLE FUTURE

### ENERGY SAVING

**1.3 M CHF** / YEAR  
**45 M CHF** LIFE SERVICE

### WEIGHT SAVING

**FASTER BOATS**  
LESS STEEL

### CO2 FOOTPRINT REDUCTION

**LESS CO2 EMISSION**  
GREEN SHIPS

**MORE & FURTHER DESTINATIONS WITH EXTRA CAPACITY**

# SIKAFLOOR® MARINE ULTRALIGHT FLOATING FLOOR

## BUILDING A SUSTAINABLE FUTURE



lightweight



acoustic  
properties



Sustainable

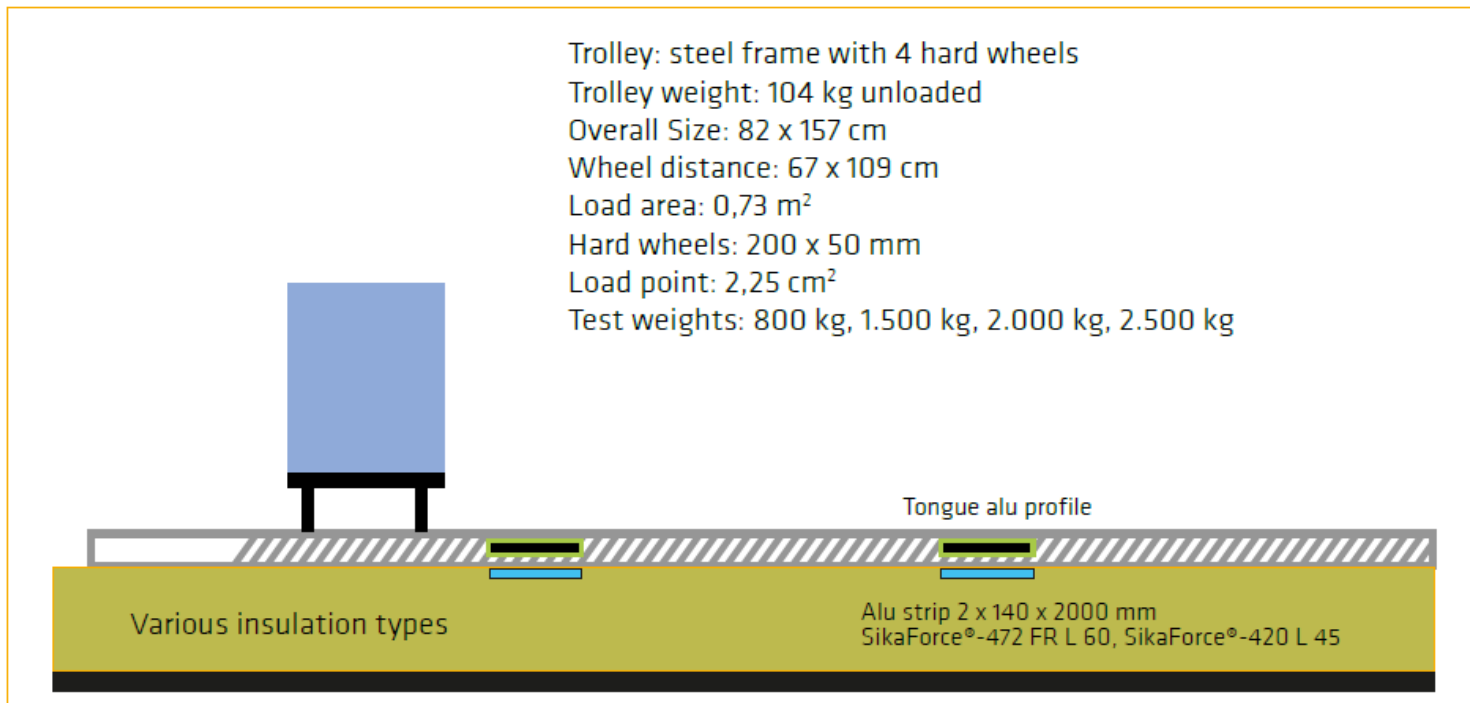


A60 fire  
rating



robust

# LOADING TESTS



# LOADING TESTS

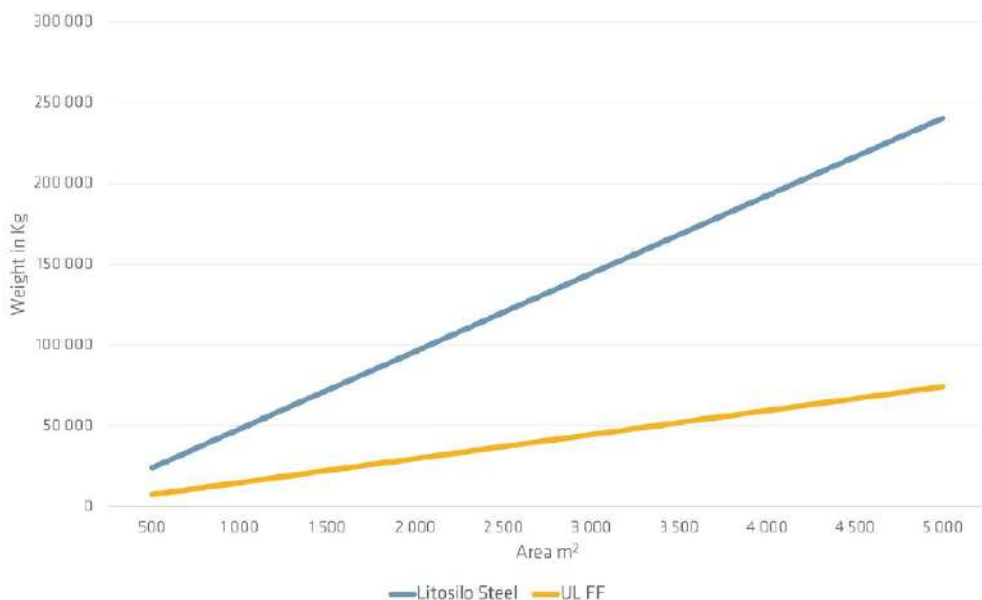


**2,5 tons/m<sup>2</sup>**



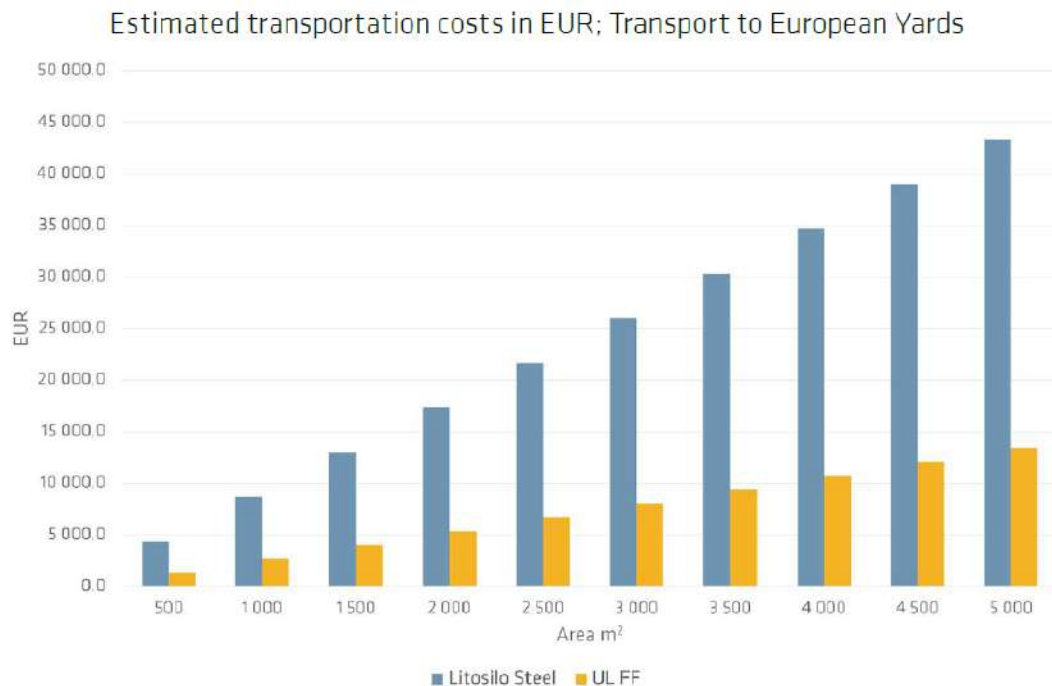
# COSTS SAVINGS. TRANSPORT

For the comparison in transportation savings, we have used an estimated cost at 0.18 Eur/kg, for the transport from Sika factory to European shipyards.



Area m²	Weight kg	
	Litosilo Steel	UL FF
500	24 050	7 425
1 000	48 100	14 850
1 500	72 150	22 275
2 000	96 200	29 700
2 500	120 250	37 125
3 000	144 300	44 550
3 500	168 350	51 975
4 000	192 400	59 400
4 500	216 450	66 825
5 000	240 500	74 250

# COSTS SAVINGS. TRANSPORT



Area m²	Transportation costs in EUR	
	Litosilo Steel	UL FF
500	4 329,0	1 336,5
1 000	8 658,0	2 673,0
1 500	12 987,0	4 009,5
2 000	17 316,0	5 346,0
2 500	21 645,0	6 682,5
3 000	25 974,0	8 019,0
3 500	30 303,0	9 355,5
4 000	34 632,0	10 692,0
4 500	38 961,0	12 028,5
5 000	43 290,0	13 365,0
About 0.18 EUR/Kg in EU		

# ACOUSTICS

System	ISO standard uses values from 100 to 3150 Hz		ASTM standard uses values from 100 to 5000 Hz	
	Weighted sound reduction index $R'_w$	Weighted normalized impact sound pressure level $Ln_{rw}$	Sound transmission class STC	Impact insulation class IIC
UL FF-1 <sup>A</sup>	55 dB	67 dB	57 dB	43 dB
UL FF-2 <sup>B</sup>	51 dB	67 dB	52 dB	43 dB
UL FF-3 <sup>C</sup>	55dB	61dB	57dB	49dB
UL FF-4 <sup>D</sup>	52dB	67dB	53dB	43dB
UL FF-2 + SFM 590 <sup>B</sup>	53 dB	67 dB	56 dB	43 dB
UL FF-1 + VEM 190 <sup>A</sup>	57 dB	61 dB	59 dB	49 dB
UL FF-2 + VEM 190 <sup>B</sup>	55 dB	61 dB	57 dB	49 dB
UL FF-1 + VEM Steel <sup>A</sup>	58 dB	63 dB	60 dB	48 dB
UL FF-2 + VEM Steel <sup>B</sup>	55 dB	63 dB	57 dB	47 dB

A: Measured with USeaProtect 96

B: Measured with SeaRox SL 436

C: Measured with USeaProtect 90

D: Measured with SeaRox 970

# Sikafloor® Marine UL FF

## Ultra-light floating floors and combinations

	Primary deck covering	Floor covering	A-60 combination	Acoustic test report	Self-leveling	Fast curing	Sloped surface	Ready for top layer	Decorative top layer	Carpet with felt	Carpet without felt	Vinyl	Wet rooms
Sikafloor® Marine UL FF-1	-	-	x	x	-	x	x	-	x <sup>A</sup>	x <sup>A</sup>	x	x <sup>A</sup>	x <sup>B</sup>
Sikafloor® Marine UL FF-2	-	-	x	x	-	x	x	-	x <sup>A</sup>	x <sup>A</sup>	x	x <sup>A</sup>	x <sup>B</sup>

<sup>A</sup> would need additional surface smoothing or treatment, consult the corresponding application manual from supplier

<sup>B</sup> in case of application in wet rooms the floor must be sealed to be watertight

# WHAT'S UNDERNEATH MATTERS





SUSTAINABILITY – BEYOND THE EXPECTED

THANK YOU FOR YOUR ATTENTION

BUILDING TRUST

