

Stravifloor Jackup-E Datasheet



Stravifloor Jackup-E is an isolated floating floor system using moulded natural rubber within bell-shaped cast iron housings cast into concrete and **jacked up after the concrete has cured**, to provide the required void depth.

Once the concrete has cured, the isolated slab is raised off the structure to the required void depth. Stravifloor Jackup-E boxes allow for easy adjustment of the final floor height.

Stravifloor Jackup-E is a cost-effective solution with minimal risk of acoustic bridging between the floating floor slab and the subfloor.



CHARACTERISTICS

- Using cast iron housing with load capacity up to 11 kips (49 kN)
- Standard solutions available with moulded natural rubber resilient pads in two standard grades: Pad-L (low stiffness), Pad-M (medium stiffness)
- Resilient pads with a maximum service load up to 2,495 lbs (11 kN)
- Standard design is for 3-3/8" (85 mm) thick floors. The housing can be fitted with a height extension unit for thicker floating floors
- Two levels of positioning support for reinforcing bars
- Elastomers identified with a colour code to minimize possible installation errors



BENEFITS

- No need for formwork
- The spacing between the bearings isn't depending on the bending strength of the formwork panels, and therefore the distance between the isolators is determined by the thickness of the floating floor slab and its reinforcement, as well as by the load bearing capacity and the box in which they are placed
- Ensure that the floating floor is decoupled from the substrate to reduce the risk of acoustical bridging. The whole slab is lifted (there is no opportunity for any debris to be left in the cavity and any bridging is broken when the slab is lifted up)
- Before the slab is raised, the area can be used as storage during construction or heavy equipment can be rolled into position, without compromising the system's performance
- System total build-up height is not dependent on the thickness of the bearing (since elastomeric isolator is located within the housing), allowing for low-profile floating floor systems
- Allow to change the total build-up height without having to change the thickness of the bearing, which would increase its natural frequency
- Easy to install and low labour cost, no need to fit unusual contours
- Fewer components and lower volumes to be transported, meaning a smaller transport cost and a positive impact on the environment
- Adjustable air void
- Possible solution for vibration, sound, and impact isolation



SYSTEM COMPONENTS



1. Cast Iron Housing
2. Housing plug
3. Bolt*



4. Bearing (Pad-L, Pad-M) with a colourful embedded steel load plate with an indent to locate the jacking bolt

5. Housing extension
6. Housing extension plug

*hexagon socket set screw with headless end [inner size 3/8" (10 mm)].



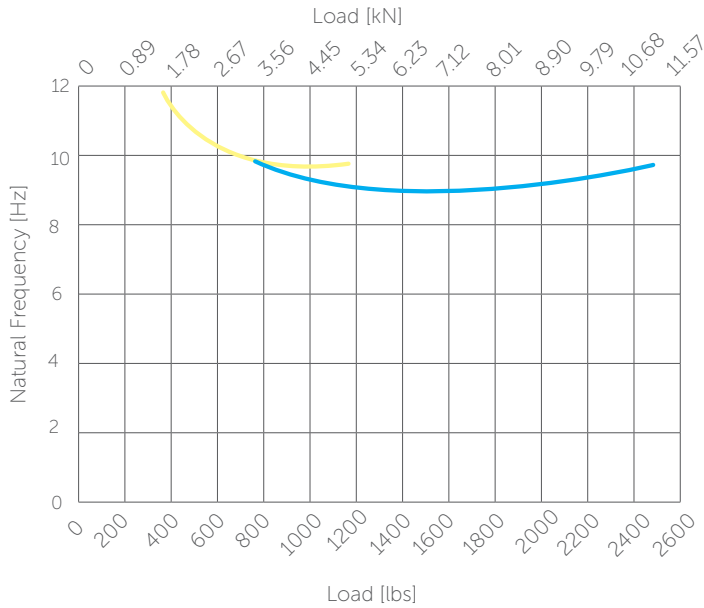
PHYSICAL AND MECHANICAL PROPERTIES OF MOULDED NATURAL RUBBER BEARINGS

Type	Design load ADL = DL+LL/4 [lbs (kN)]	Max. service load TL = DL+LL [lbs (kN)]	Colour code**	Height* [inch (mm)]
Pad-L	900 (4)	1146 (5.1)	Yellow (RAL1021)	2-1/16 (53)
Pad-M	1910 (8.5)	2495 (11.1)	Blue (RAL5012)	

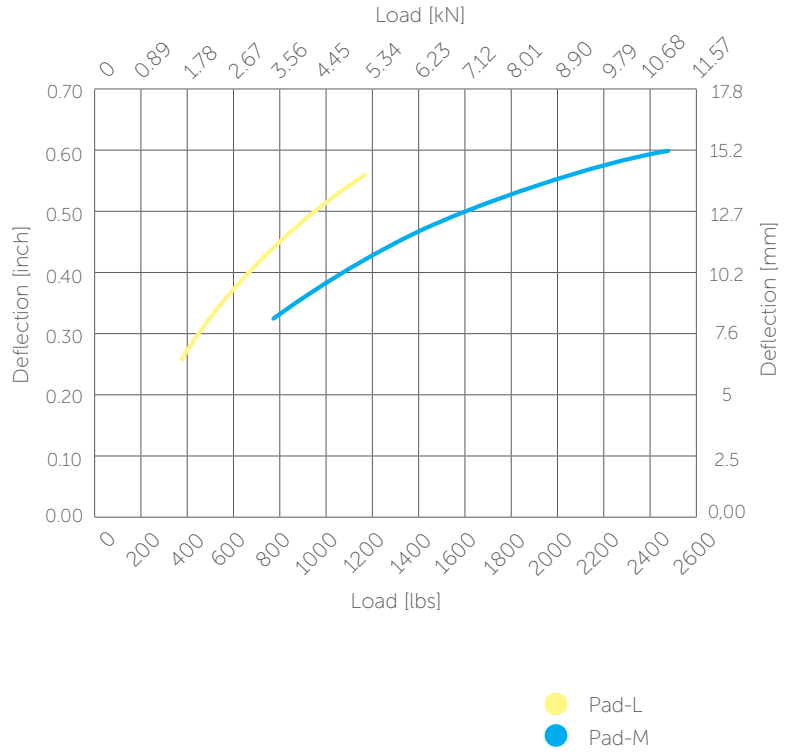
*including embedded steel load plate with an indent to locate the jacking bolt

**coloured metal plate with electrophoretic deposition and powder coating

Natural Frequency vs Load



Deflection vs Load



Recommend reinforcement

CDM Stravitec recommends the following minimum requirements for all phases of work pertaining to the construction of the reinforced concrete jack-up slabs:

- Work shall conform to the minimum standards of the "Building Code Requirements for Structural Concrete", ACI 318, & the "International Building Code", IBC, latest editions.
- Deformed reinforcing bars shall conform to the requirements of ASTM A615 Grade 60.
- The concrete compressive strength shall be at least 4000 psi (25 MPa) at 28 days.
- Slabs with a thickness < 6" (150 mm) shall be reinforced with minimum one layer of #4@10", each way, with a clear cover of 1-1/2" (40 mm) from top of slab.
- Slabs with a thickness of 6" (150 mm) shall be reinforced with minimum two layer of #3@10", each way, each way, with a clear cover of at least 3/4" (20 mm).
- Splices shall be at least 24" (610 mm), to be located at support lines for bottom steel and at mid span lines for top steel.
- All reinforcing bars shall be uniformly distributed across the length and width of the slab.
- All reinforcing bars shall be well secured in position prior to concrete placing.
- The contractor shall verify all dimensions prior to construction. The architect and/or structural engineer shall be notified of any discrepancies or inconsistencies.



ACOUSTICAL RESULTS

Test Setup 1:

1. 5-1/2" (140 mm) reinforced concrete slab
2. 1-3/16" (30 mm) air void
3. PE-film
4. Cast iron housing with Pad-M
5. 4" (100 mm) concrete reinforced floating slab

IIC*	STC**
66	69

Laboratory report (ACL003-23 and ACL004-23 by Itecons) available upon request.

Test Setup 2:

1. 5-1/2" (140 mm) reinforced concrete slab
2. 2" (50 mm) air void
3. PE-film
4. Cast iron housing with Pad-M
5. 4" (100 mm) concrete reinforced floating slab

IIC*	STC**
66	70

Laboratory report (ACL001-23 and ACL002-23 by Itecons) available upon request.

Test Setup 3:

1. 5-1/2" (140 mm) reinforced concrete slab
2. 2" (50 mm) void partially filled with insulation material [13/16" (20 mm)]
3. PE-film
4. Cast iron housing with Pad-M
5. 4" (100 mm) concrete reinforced floating slab

IIC*	STC**
68	70

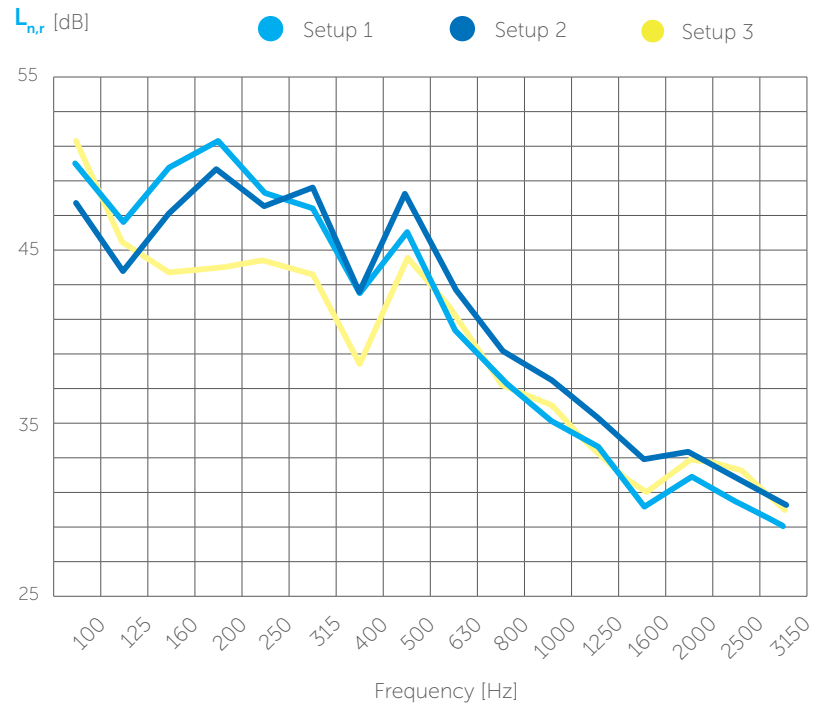
Laboratory report (ACL005-23 and ACL006-23 by Itecons) available upon request.

*Measurements in accordance with ISO 10140-3:2021. IIC single figure rating determined in accordance with ASTM E989:1999 by CDM Stravitec, based on ISO measurements.

**Measurements in accordance with ISO 10140-2:2021. STC single figure rating determined in accordance with ASTM E413-87:1999 by the lab responsible for the measurements, based on ISO measurements.

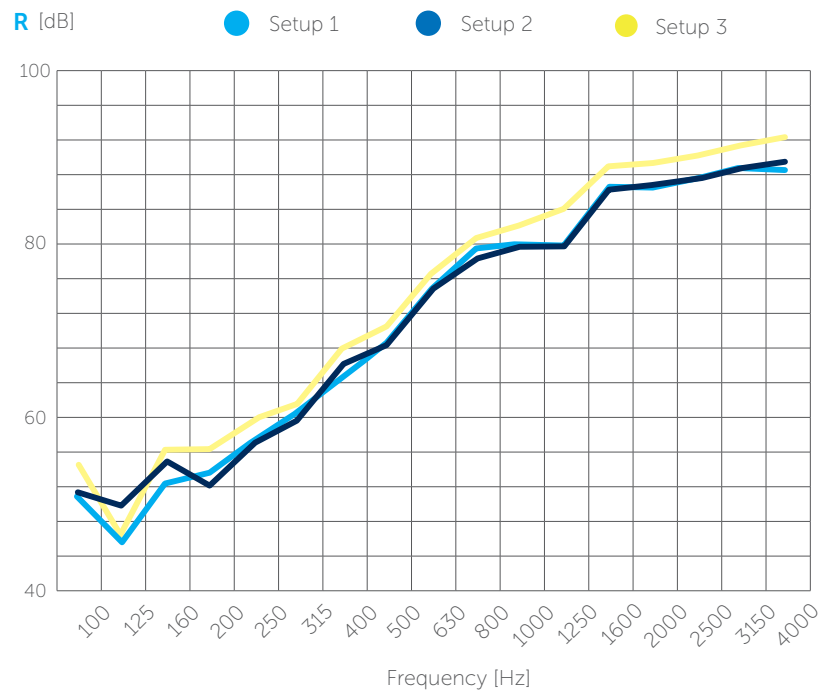
Acoustical Isolation: Impact Sound Insulation

Frequency [Hz]	L_{nr} (dB)		
	Setup 1	Setup 2	Setup 3
100	50	47.7	51.2
125	46.5	43.7	45.4
160	49.8	47.2	43.7
200	51.3	49.6	43.9
250	48.3	47.5	44.4
315	47.4	48.6	43.5
400	42.4	42.6	38.2
500	46.1	48.2	44.5
630	40.4	42.8	41.3
800	37.6	39.1	37.2
1000	35.2	37.6	36
1250	33.6	35.4	33.1
1600	30.1	32.9	31
2000	32	33.3	32.9
2500	30.3	31.7	32.3
3150	29	30.1	29.9



Airborne Sound Insulation

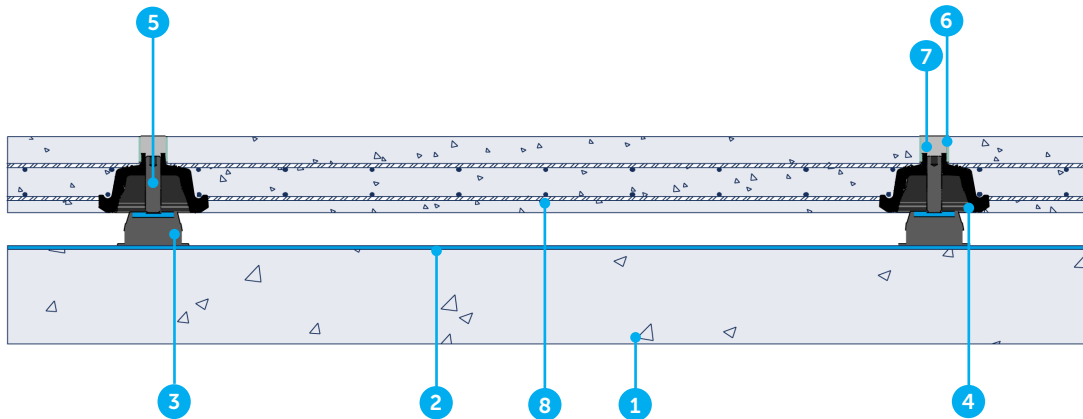
Frequency [Hz]	R (dB)		
	Setup 1	Setup 2	Setup 3
50*	48.8	50.3	45.8
63*	45.3	43.6	53.4
80*	60.2	61.2	63.7
100	51	51.3	54.6
125	45.6	49.8	46.3
160	52.5	55.1	56.1
200	53.6	52.1	56.4
250	57.5	57.2	59.7
315	60.7	59.9	61.7
400	64.8	66.2	68.3
500	68.8	68.4	70.7
630	74.9	74.5	76.4
800	79.6	78.5	80.8
1000	80	79.7	82.2
1250	79.9	79.7	84.3
1600	86.6	86.5	88.9
2000	86.5	86.9	89.4
2500	87.7	87.6	90.2
3150	88.9	88.9	91.4
4000	88.6	89.5	92.4



Data reported with * are not included in accreditation scope.



TYPICAL ASSEMBLIES



1. Structural slab
2. PE-film (poly sheeting)
3. Bearing
4. Housing
5. Bolt
6. Housing extension (only applicable for floating slabs thicker than 85 mm)
7. Grout
8. Reinforced concrete floating slab

Note: an installation manual is available upon request.

WILHAMS

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