FENIX	**CERTIFICATE**	TECTUM

Certificate date:	December 2023
Issued to:	FENIX STAGE, S.L.U. Avda. de los Trabajadores, 24 - Horno de Alcedo 46026 - Valencia (Spain)

The inspector that signs this certificate has done the report "PACQ-1000 STRUCTURE ANALYSIS" where the stability of the structure PACQ-1000, audio tower formed by trusses SQR-40, evaluated against external wind loads, and following the provisions of:

OBJECT OF STUDY	APPLIED LEGISLATION
FORMED AND LAMINATED STEEL	CTE DB SE-A (Technical Building Code)
ALUMINIUM	Eurocode 9
WIND ACTIONS	CTE SE-AE Annex D (Wind Actions)

MARK:	FENIX STAGE, S.L.U.	REFERENCE / TYPE	PACQ-1000
TYPOLOGY		AUDIO TOWER	

Description:

The PACQ-1000 audio tower has been designed to lift sound equipment of different dimensions and heights:

- Dimensions in plan:
  - Working area: 3,10 x 3,50 m
  - Enclosed area: 0,83 x 1,67 m
- Maximum height: 8 m
- Minimum height: 6,50 m
- Maximum load: 1.000 kg
- Wight of the structure without loads: 280 kg
- Materials:
  - Truss SQR-40 aluminium EN AW-6082 T6 according to UNE 38350 standard Aluminium and aluminium alloys for forging. 6000 series.
  - Support Base of rolled steel S275 according to CTE and under the UNE-EN 10025-1:2006 standard for the technical conditions for the supply of hot-rolled structural steels and the UNE-EN 10210-1:2007 standard for hollow section structural steels or hot formed tubular.
- Stability study:
  - The structure with a maximum of 1.000 kg suspended is stable for heights of 6,50 m and 8 m, without the installation of counterweights being necessary.
  - Wind loads for speeds of 45 km/h, 30 km/h, 20 km/h and 10 km/h.
  - Suspended loads in head of 1.000 kg, 700 kg, and 500 kg.
  - Heights considered in the study of 6,50 m and 8 m.
  - Most unfavourable cases - installation of counterweights:
    - 210 kg of counterweight for a load of 1.000 kg, 5,20 m² of wind incidence surface and maximum speed of 45 km/h in a 6,50 m structure.
    - 260 kg of counterweight for a load of 1.000 kg, 5,20 m² of wind incidence surface and maximum speed of 45 km/h in an 8 m structure.
    - For the other cases studied, consult the table attached as Annex A.

Each lifting tower has to be supplied with an EC declaration of conformity, including serial number and date of manufacturing. To comply with DGUV Rule 115-002, for some event or production, an inspection done by an expert could be required before start up.

Based on the calculations made in the aforementioned report and taking into account the typology, materials and dimensions of the structure, the inspector certifies that:

- The structure in windy environments must be counterbalanced with a minimum of 50 kg in all cases, a maximum of 210 kg for the 6,50 m high tower and a maximum of 260 kg for the 8 m high tower, with suspended loads of 1.000 kg (intermediate values can be consulted in Annex A).
- The structure in environments free of wind loads is stable for all the load arrangements assumed in the report.
- The study carried out focuses on wind speeds equal to or less than 45 km/h, so for wind speeds greater than 45 km/h the structure must be dismantled for safety.
- The study is developed taking into account the support of the tower on a flat surface that allows the correct distribution of loads.

In Valencia (Spain) in December 2023

MOLINES FERRANDIZ PABLO - 21679802W

Firmado digitalmente por MOLINES FERRANDIZ PABLO - 21679802W

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Civil Engineer CITOP: 21.712

ANNEX A.- TABLE OF COUNTERWEIGHTS ACCORDING TO SUSPENDED LOADS AND WIND SPEED

HEIGHT (m)	MAX. LOAD (KG)	EXPOSED SURFACE (m²)	WIND SPEED (km/h)	WIND LOAD (kN/m²)	COUNTERWEIGHT TO INSTALL (kg)
6,50	1.000	5,20	45	0,28	210
			30	0,13	140
			20	0,05	100
			10	0,01	80
	700	3,64	45	0,28	180
			30	0,13	90
			20	0,05	60
			10	0,01	50
	500	2,60	45	0,28	140
			30	0,13	60
			20	0,05	50
			10	0,01	50
8	1.000	5,20	45	0,28	260
			30	0,13	160
			20	0,05	120
			10	0,01	90
	700	3,64	45	0,28	200
			30	0,13	120
			20	0,05	90
			10	0,01	50
	500	2,60	45	0,28	160
			30	0,13	70
			20	0,05	60
			10	0,01	50