

DATASHEET

## Simplex and Duplex 350kN

### High Stiffness Flexural Frame

EN 1339 | EN 1340 | EN 12390-5 | ASTM C78 | ASTM C293 | ASTM C1550 | EN 14488-5 | ASTM C1609 | ASTM C1018



SIMPLEX, concrete beam testing



DUPLEX, testing FRC beam to ASTM C 1609

These high stiffness flexural frames have been especially designed for displacement controlled testing on advanced construction materials, e.g. Fiber Reinforced Concrete (FRC) and sprayed concrete.

These tests are significantly affected by the actual frame stiffness therefore the relevant international Standards state stiffness limits which are exceeded by these new models (better than 200 kN/mm).

The frames are fitted with high precision load cell (recommended for FRC testing), piston travel limit switch and connection kit to the control console.

Please note that bearers are not included.

### Benefits

- High rigidity (200 kN/mm), especially suitable for testing FRC and sprayed concrete
- Suitable for testing Round panel dia. 800 mm to ASTM C 1,550
- Load measurement by load cell
- Piston return by counterweights
- Piston travel limit switch included

#### SIMPLEX Additional main features

- For testing different kind of specimens (beams, flagstones, slab) with a maximum length of 880 mm.

#### DUPLEX Additional main features

- Double testing mode: parallel and orthogonal
- For testing different kind of specimens (beams, flagstones, slab)
- Max span between lower rollers: 1.5m

# Technical Specifications

## Simplex



In this frame the remarkable result in terms of stiffness (200 kN/mm) comes from the frame section but is also derived from the particular layout which keeps the specimen aligned with the frame crossbeams maximizing structural rigidity.

The new layout also allows easier frontal specimen loading and positioning. The horizontal daylight accommodates large specimens (slab, flagstones), concrete beams and kerbs long up to 880 mm.

Model	SIMPLEX 50-C1711/FR
Max cap. kN	350
Load sensor	Load cell
Horizontal clearance [mm]	900
Max. vertical clearance [mm]*:	-
with 50-C1500/1 (4 points)	430
with 50-C1500/11 (4 points)	335
with 50-C1500/1 (3 points)	350
with 50-C1500/11 (3 points)	415
with 50-C1500/2	290
with 50-C1500/2 + 50-C1500/3	330
with 50-C1500/2 + 50-C1500/4	575
with 50-C1500/2 + 50-C1500/12	275
with 50-C1500/6	
with 50-C1500/7	
with 50-C1700/7	
Distance between upper rollers (adjustable) mm	From 100 to 200, or single roller
Distance between lower rollers (adjustable) mm	From 150 to 800
Piston travel mm	130
Overall dimensions (lxwxh) mm	1,150 x 600 x 1,550
Weight approx. kg	400

\* The vertical daylight can be reduced by using the distance pieces already included to reduce the daylight by: 50 mm, 80 mm, 100 mm, 130 mm, 150 mm and 180 mm. Additional distance pieces are available as accessories.



Energy absorption test set-up to EN 14488-5



Easy frontal positioning of the specimen



Flexure testing on FRC round panel to ASTM C 1550

# Technical Specifications

## Duplex



This high stiffness flexural frame has been designed to have a double testing mode: parallel and orthogonal. Parallel mode, granting high stiffness (200 kN/mm), is meant to be used for displacement controlled testing on advanced construction materials, e.g. fiber reinforced concrete (FRC) and sprayed concrete. Orthogonal mode is meant to be used to test long specimens having more than 880mm length.

Model	DUPLEX 50-C1701/FR
Max cap. kN	350
Load sensor	Load cell
Horizontal clearance [mm]	900
Max. vertical clearance [mm]*:	-
with 50-C1700/1	260
with 50-C1500/2	180
with 50-C1500/2 + 50-C1500/3	245
with 50-C1500/2 + 50-C1700/4	215
with 50-C1500/6	165
with 50-C1500/7	405
with 50-C1700/7	100
Distance between upper rollers (adjustable) mm	From 100 to 200, or single roller
Distance between lower rollers — Parallel testing mode (adjustable) mm	From 100 to 200, or single roller
Distance between lower rollers — Orthogonal testing mode (adjustable) mm	From 150 to 800
Piston travel mm	130
Overall dimensions (lxwxh) mm	1,150 x 600 x 1,550
Weight approx. kg	520

\* The vertical daylight can be reduced by using the distance pieces already included to reduce the daylight by: 50 mm, 100 mm and 150 mm. Additional distance pieces are available as accessories.



Testing FRC beams to EN 14651



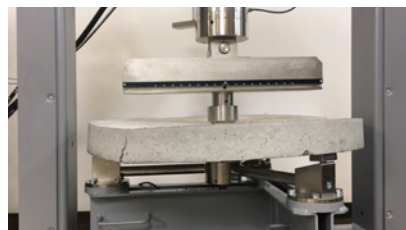
Energy absorption test to EN 14488-5



Kerbs testing to EN 1340



Round slab test to ASTM C1550 travel displacement transducer



Flexure testing on FRC round panel to ASTM C 1550

## Ordering Information

### 50-C1711/FR

**SIMPLEX** – 350 kN cap. high rigidity flexural frame, complete with load cell and connection kit for separate control console.

Rollers not included. Includes set of spacers to reduce the vertical daylight by:

50 mm, 80 mm, 100 mm, 130 mm, 150 mm and 180 mm.

### 50-C1701/FR

**DUPLEX** – 350 kN cap. high rigidity flexural frame, complete with load cell and connection kit for separate control console.

Rollers not included. Includes set of spacers to reduce the vertical daylight by: 50 mm, 100 mm and 150 mm.

## Accessories

Please visit [www.controls-group.com](http://www.controls-group.com) for more information.



CMOD testing to EN 14651



Piston travel displacement transducer

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