

#### Technical data sheet

## Metal box-out shutters

# **Product description**

Metal box-out shutters made of interlocked sheet steel are used as permanent formwork or as recess formers. Upon customer's request, MAX FRANK transports the box-outs to the construction site preassembled or unassembled. These metal box-out shutters used as permanent formwork provide excellent shear force transmission.

- The shutter profile fulfils the requirement for the highest category "indented" according to DIN 1045-1 and/or DIN EN 1992-1-1
- Section depth 20 mm
- No freight and storage problems
- Quick and easy assembly without additional fixings

### Pre-assembled box-out shutters

Box-out shutters made of interleaved steel sheet are used preferably as recess formers for retrospectively installing clamped supports and as permanent formwork for smaller machine foundations.

- Minimum size available: from 200 x 200 mm.
- Completely assembled box-out shutters are supplied in appropriate dimensions specified by the project and supplied directly to the construction site.



## Unassembled folding box-out shutters

Box-out shutters made of interleaved steel sheet are used preferably as recess formers for retrospectively installing clamped supports and as permanent formwork for smaller machine foundations.

- Completely assembled box-out shutters are supplied in appropriate dimensions specified by the project and supplied directly to the construction site.
- Minimum size available: from 200 x 200 mm.



### Unassembled folding box-out shutters

Yet-to-be-installed box-out shutters made of interleaved steel sheet may be used as recess formers and permanent formwork, just like the pre-installed variant, but are advantageous regarding transportation and storage due to their low volume.

- Easy and quick assembly with the included self tapping screws using pre-drilled holes
- Due to shutter corners being pre-punched in the works, folding the shutter together is extremely simple



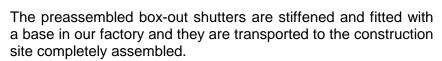
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# Factory made stiffening for box-out shutters

The box-out shutters consist of sturdy trapezoidal sheet. Therefore, no bracing elements are necessary in many cases. If, however, particularly large-size recesses must be produced, we recommend additional stiffening of the box-out shutters – see chart below.





## Stiffening chart

Values given in the chart are approximate values only and depend on the actual at-site conditions and on the concreting speed

Box-out shutter width		Box-out shutter height cm															
	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
45/45																	
50/50																	
55/55																	
60/60																	
65/65																	
70/70																	
75/75																	
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100/100														
Box-out shutter self-supporting								ffen bo	x-out sh	nutter a	at site			

The recommendations to the application techniques that have been made to support the user by virtue of our available experience and to the best of our knowledge according to the present state of knowledge in science and practice, are not binding and do not constitute any contracted legal relations or ancillary obligations. They do not exonerate the user from examining the usability of our product for the intended application on his own responsibility.

Recommendations with regard to product application given in the present technical data sheet for practical assistance of product users are based on our experience and our present scientific and practical body of knowledge. These recommendations, however, are given without engagement and do not establish a contractual relationship or subsidiary duties. These recommendations do not relieve users of their liability and of their own responsibility to test, whether our product is adequate for the intended purpose of application.