

User Manual

# BALUSTRADE module

EasvFix

**The BALUSTRADE module** of the EasyFix application from Rawlplug is based on the same data, guidelines and the computational mechanism implemented in the CONCRETE module, while it is dedicated to balustrades, and as such, it covers fixing configurations and load types specific to this segment. Moreover, it includes the guidelines laid down in the EN 1991-1-1 standard which recommends the range of characteristic loads for different use categories.

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The BALUSTRADE module comprises the following tabs:  
Fixture, Anchors, Substrate, Loads, Results, Project details and Documents.

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EaSyFiX

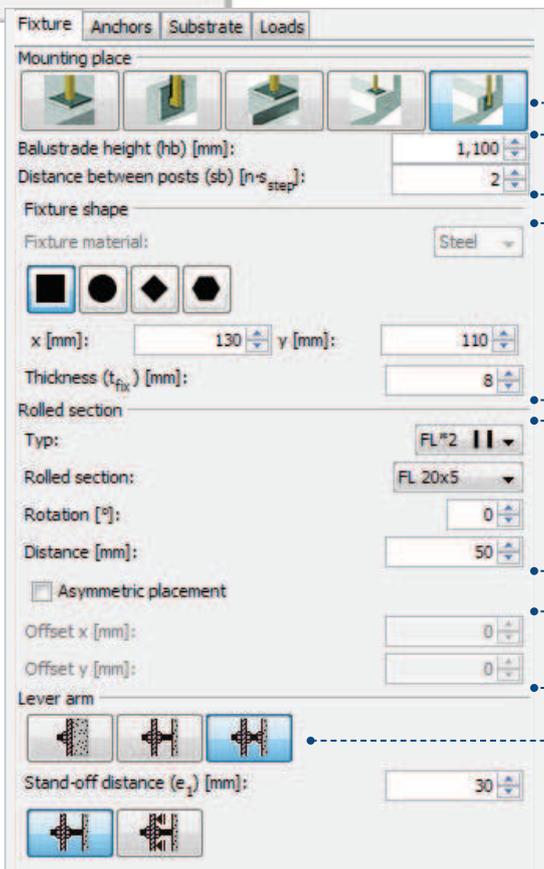
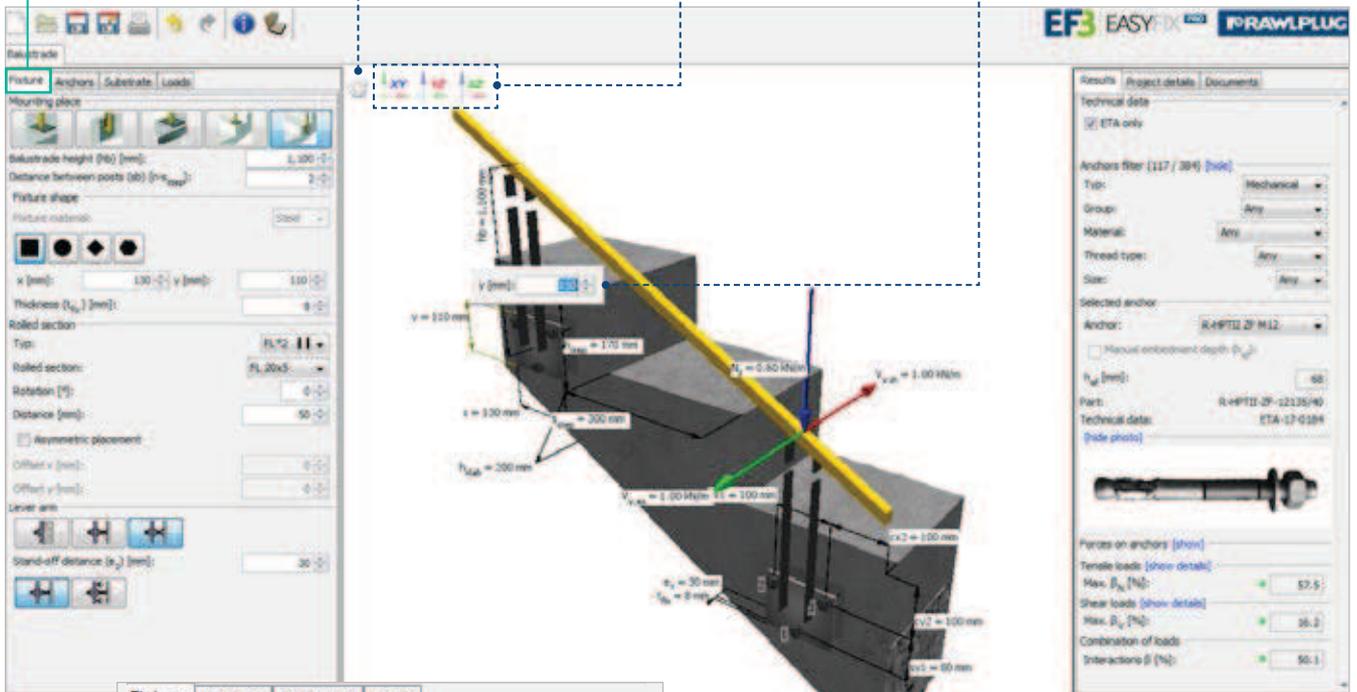
The Fixture tab enables users to:

Fixture

1. rotate the model and return to the initial display

2. display the drawing in the XY, YZ and XZ axis view

3. enter data on the model by clicking dimension lines



4. indicate the balustrade mounting place

5. enter characteristic dimensions of the given model

6. choose fixture parameters for shape and dimensions

7. add a rolled section by defining its shape, size and rotation

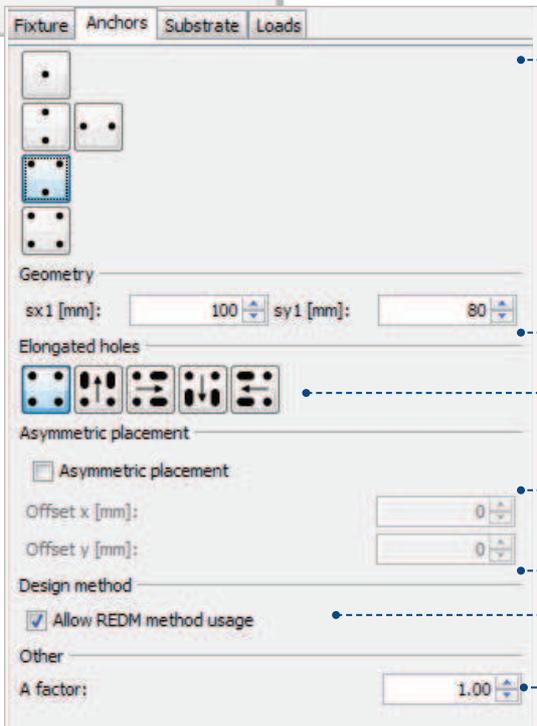
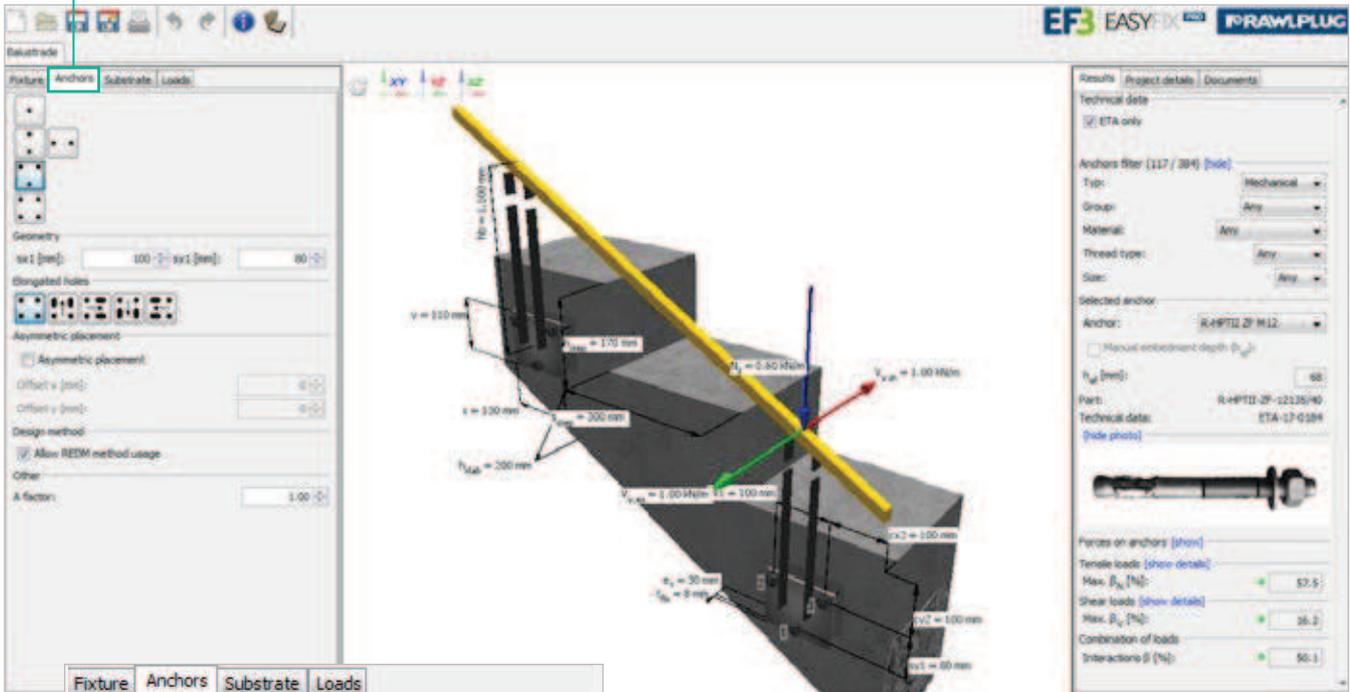
8. define asymmetric section placement against the fixture centre of gravity

9. define offset for slab fixing



The following options are available from the Anchors tab:

Anchors



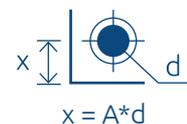
1. choice of number and arrangement of anchors

2. choice of elongated holes set along the selected fixture edge

3. option to define asymmetric anchor arrangement against the co-ordinate system

4. option to allow the Rawlplug Engineering Design Method (REDM) use

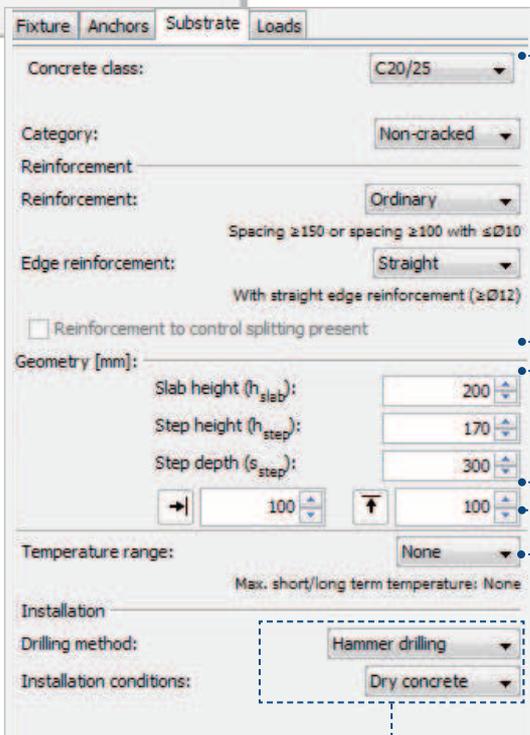
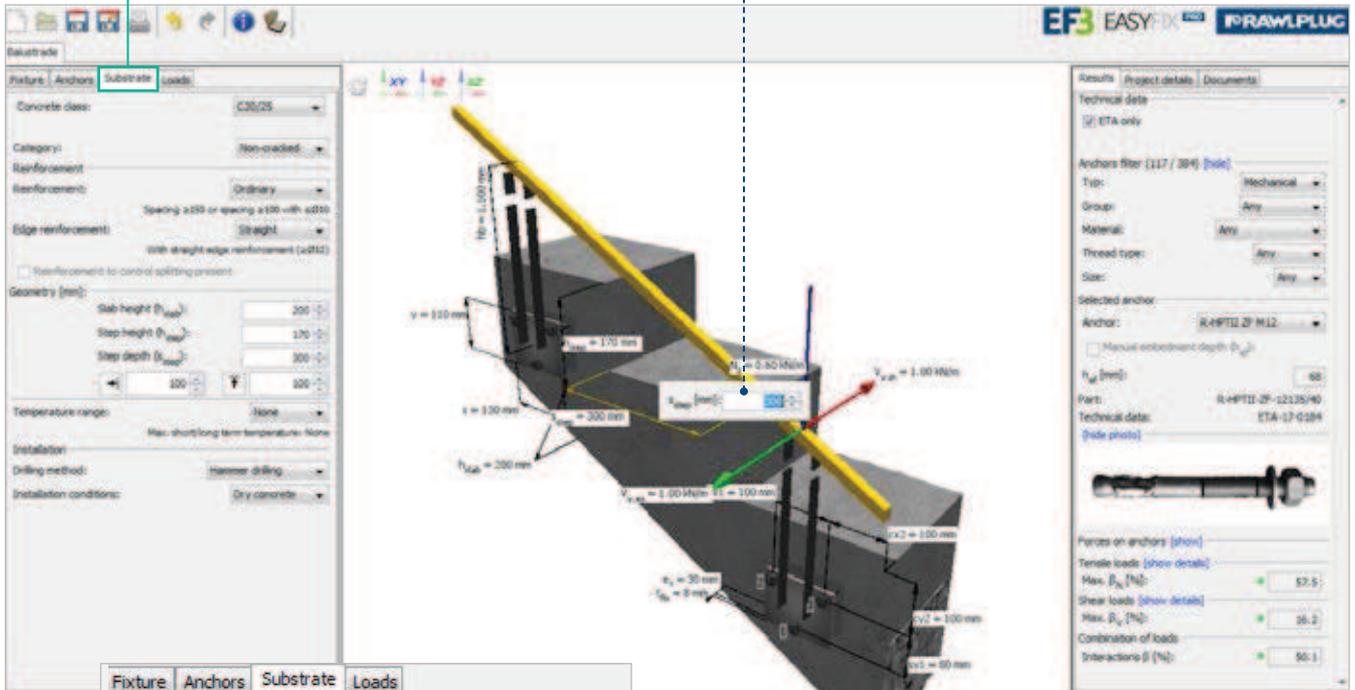
5. option to define distance between hole edge and slab edge



The following options are available from the Substrate tab:

Substrate

1. possibility to enter all dimensions on the model



2. selecting substrate by defining concrete category and reinforcement type

3. option to enter substrate dimensions characteristic of the given model, including slab thickness, step height and depth as well as pedestal dimensions

4. option to set minimum edge distance

5. option to define the range of permissible operating temperatures for anchors (bonded)

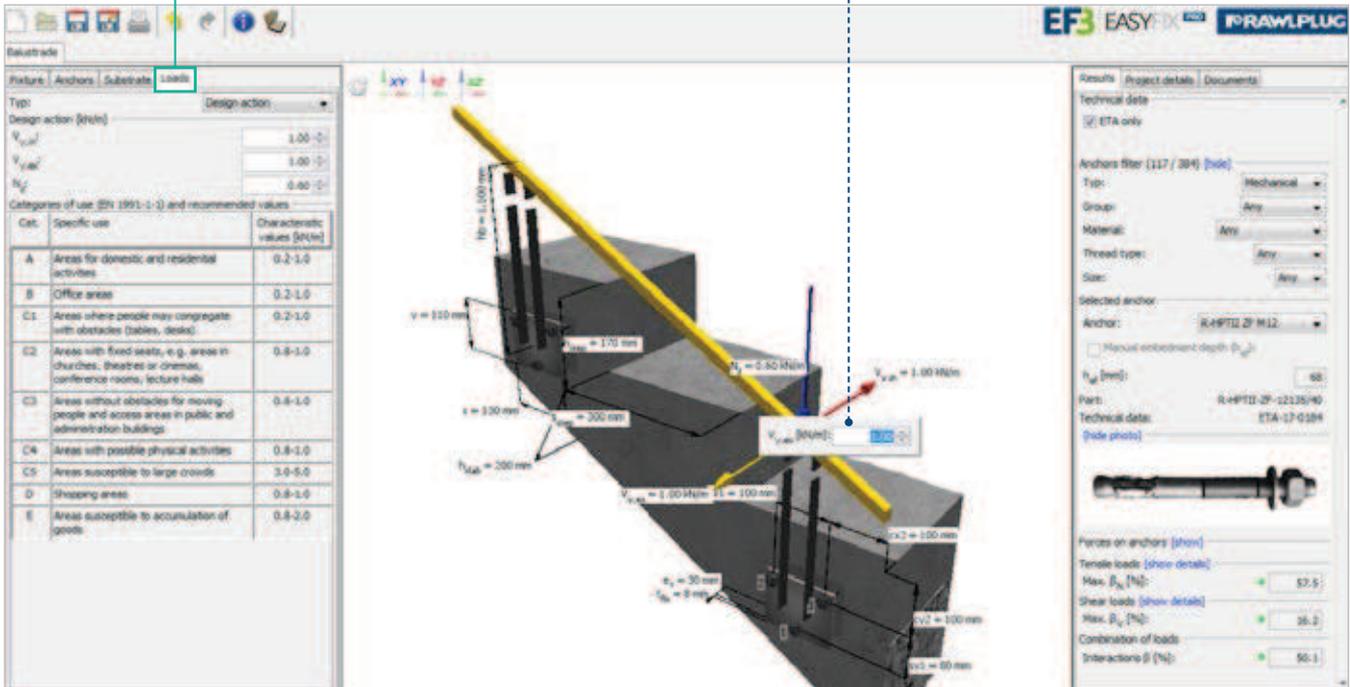
6. option to enter installation parameters



The Loads tabs contains the following features:

Loads

3. possibility to enter loads on the model



Fixture Anchors Substrate **Loads**

Typ: Design action

Design action [kN/m]

$V_{y,in}$  1.00

$V_{y,ex}$  1.00

$N_z$  0.60

Categories of use (EN 1991-1-1) and recommended values

Cat.	Specific use	Characteristic values [kN/m]
A	Areas for domestic and residential activities	0.2-1.0
B	Office areas	0.2-1.0
C1	Areas where people may congregate with obstacles (tables, desks)	0.2-1.0
C2	Areas with fixed seats, e.g. areas in churches, theatres or cinemas, conference rooms, lecture halls	0.8-1.0
C3	Areas without obstacles for moving people and access areas in public and administration buildings	0.8-1.0
C4	Areas with possible physical activities	0.8-1.0
C5	Areas susceptible to large crowds	3.0-5.0
D	Shopping areas	0.8-1.0
E	Areas susceptible to accumulation of goods	0.8-2.0

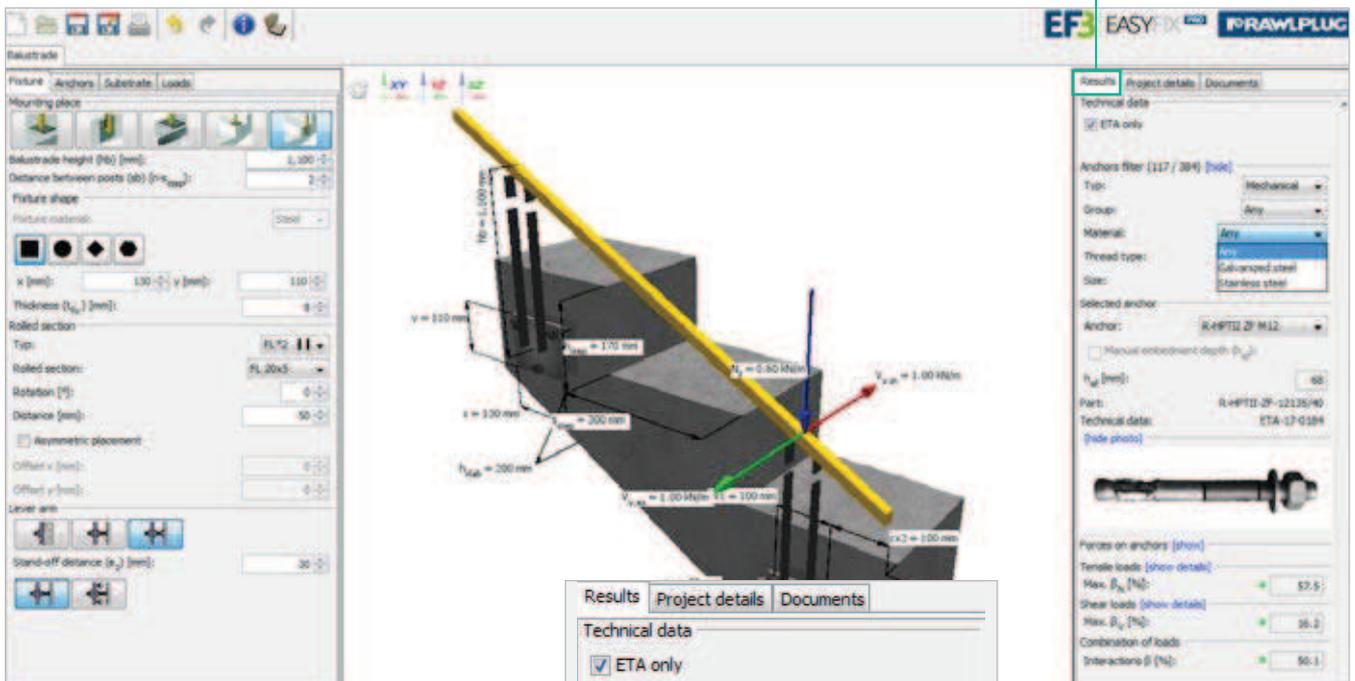
1. entering values for design and characteristic loads, depending on the choice, including the possibility to change safety factors against applicable standards

2. for improved ease of use, excerpt from the EN 1991-1-1 standard stating the characteristic loads for different use categories



The features available from the Results tab are as follows:

Results



1. filters making it easier to select anchors depending on their type, material and size

2. option define custom anchoring depth for bonded anchors

3. anchor choice and visualisation

4. option to display values of forces affecting each anchor and the neutral axis

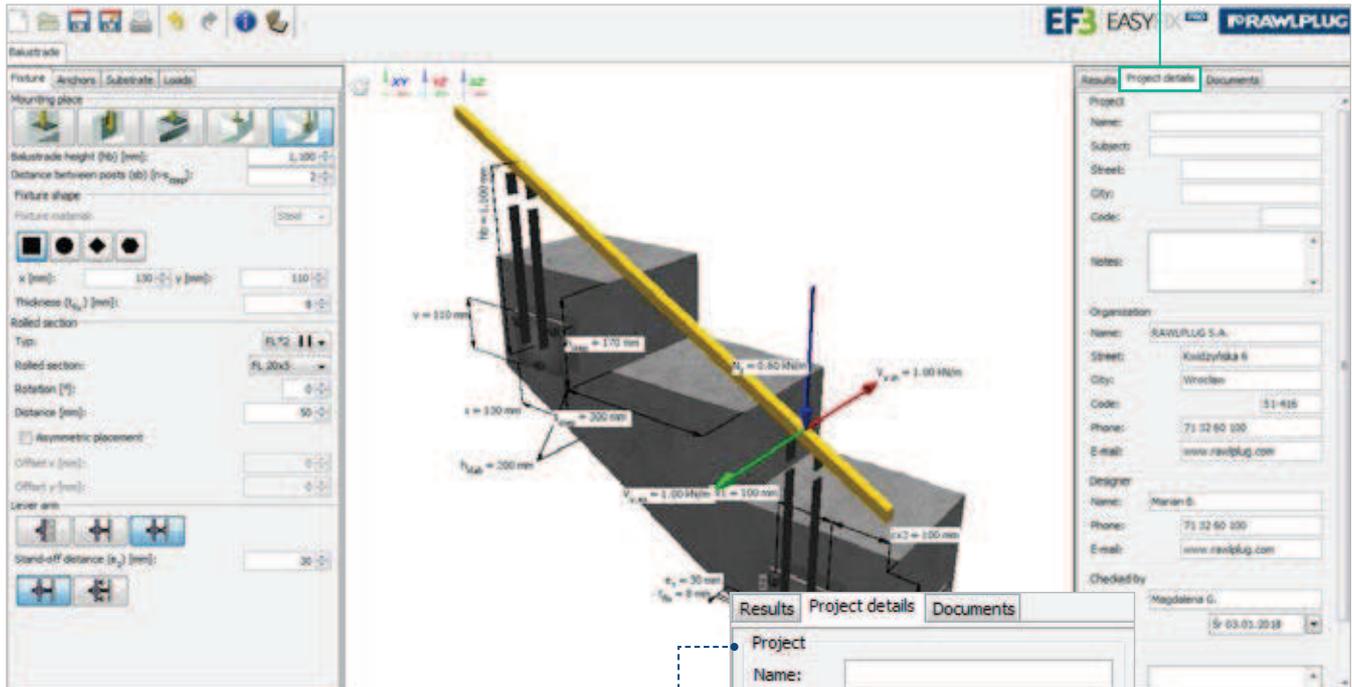
5. option to display values of loads according to individual models of rupture

6. calculation results, including identification of their correctness or error



The Project Details tab allows the user to enter detailed data of the pending design project as well as of the engineering office.

Project details



1. fields for entering data to identify: design project, engineering office location, designer, reviewer

Results Project details Documents

Project

Name:

Subject:

Street:

City:

Code:

Notes:

Organization:

Name:

Street:

City:

Code:

Phone:

E-mail:

Designer:

Name:

Phone:

E-mail:

Checked by:

Name:

Date:

General



The Documents tab allows the user to access a list of documents pertaining to the given fixing solution and download them.

Documents

