

Manhole covers and gully grates C250 and D400 class

An innovating conception ensuring the stability of the cover or the grating in its frame was developed for the PARXESS manhole covers and DEDRA 400 gratings ranges.

The principle takes back, on the one hand the used concept for the AKSESS range (3 points with oblique seatings ensuring the stability during the vertical solicitations.), to which others seatings are added, also oblique, but in another plan, enabling to obtain a good stability during the horizontal solicitations. (Passage of vehicles.)

This seatings system enables to ensure a perfect stability of the cover or the grating in its frame at the hands of engendered constraints by the passage of vehicles and thus to guarantee the silence of these products in service.

This also enables to offer a good durability of the manhole covers and gully grates by removing all movements of the cover or the grating in its frame, frequent cause of premature degradation.

The DEDRA 400 gratings use the principle of stability of PARXESS type (C250), dimensioned in relation with the constraint level of the D400 class.

Explanation of the stability principle:

Placed on the frame, the cover (or the grating) initially takes seating on three points, of which one is necessary oblique by conception.

In this situation, the balance of the cover is assured vertically on three points, but the component of horizontal reaction generated by the oblique seating doesn't enable to balance the cover in the horizontal plan.

This report obliges the cover to move horizontally until the contact of the counter-bracing which faces him.

The contact of counter-bracing, directed towards outside, oppose one second no convergent reaction with that of the oblique seating, it results from it that balance is still not ensured in the horizontal plan.

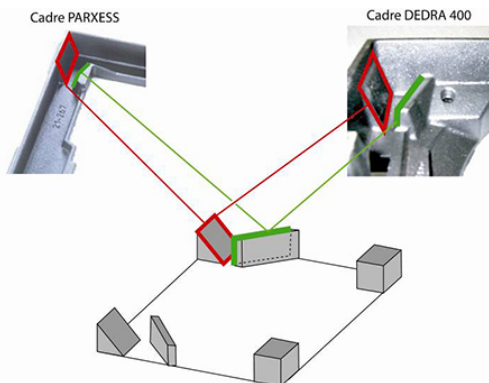
The reaction resulting coming from of the horizontal reactions from the seating and the counter-bracing will find a report of balance only in one convergent and opposite force.

Deprived of another possibilities, the cover moves in the horizontal plan, the meaning of the resultant of the reactions of the oblique seating and counter-bracing couple, until it finds the simultaneous contact of the seating and the counter-bracing symmetrically opposite that the couple is able to generate a convergent reaction resulting from opposite direction.

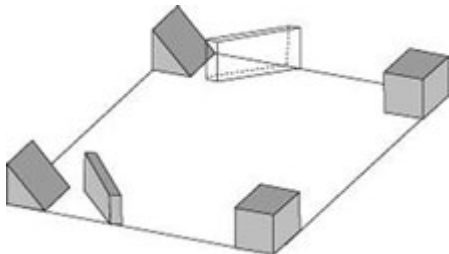
According to this system, the cover is stabilized under its actual weight in contact with the two horizontal seatings, of the two oblique seatings and the two counter-bracings.

Any additional oblique effort with the actual weight, of horizontal and vertical component (directed downwards) does not disturb this balance, what confers a stability of the cover in service, under the passage of vehicles.

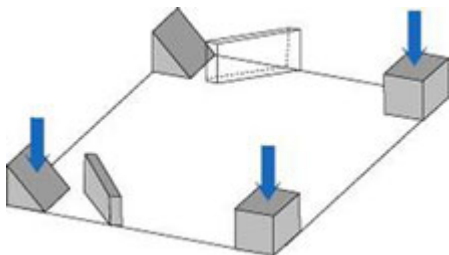
Location of oblique seatings



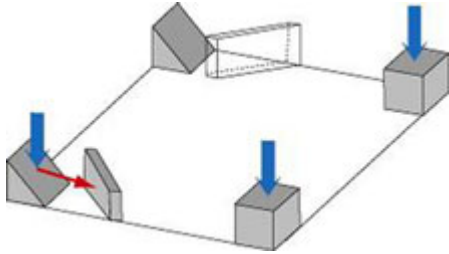
Schematization of stability principle



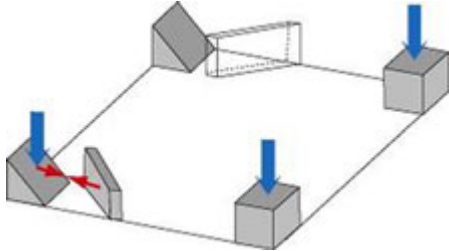
Position of the seatings



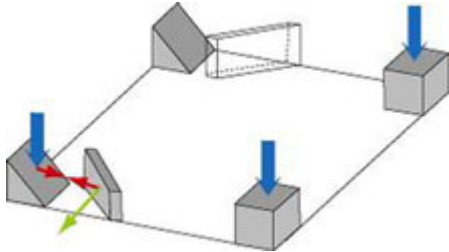
Application of the sollicitation



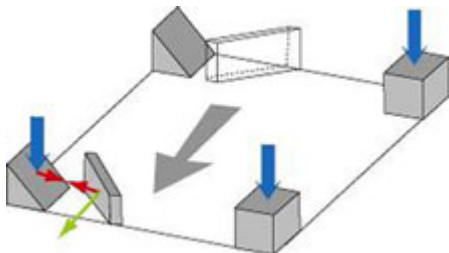
Reaction of the first oblique seating



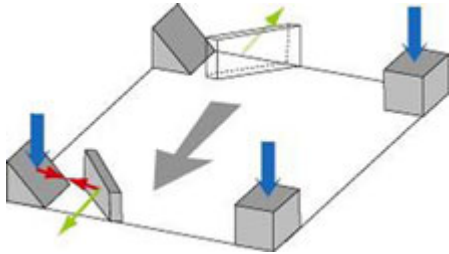
Contact on the second seating



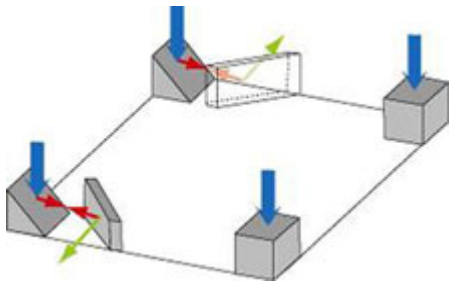
Reaction of the second oblique seating



Move of the cover in the horizontal plan



Contact on the third oblique seating



Reaction of the third oblique seating and contact on the fourth seating = stability

For a correct operation of this stability principle, it is imperative to let the cover or the grating to move in its frame so as to obtain a contact on the four seatings.

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