

FORMWORK ELEMENT PROVIDED WITH SACRIFICIAL SECTIONS

Background of the invention

5 The present invention has as its object a formwork element for a molded wall panel.

In known fashion, when it is desired to make a molded wall, i.e. a wall made of concrete in a trench dug into the ground, this operation is carried out in successive slices, each corresponding to a molded wall panel, the panel assembly constituting the wall.

10 The ensure the mechanical continuity of the panels of the wall in the connection zone between two panels, a particular shape is given to the end of each panel, which allows the embedding of one end of a panel in the end of the preceding panel. This shape is obtained by means of a formwork element which generally includes a seal. More precisely, this formwork
15 element is place at one end of the trench, before the concreting of said trench.

The invention relates more particularly to a formwork element for a molded wall panel end, said formwork element extending in a longitudinal direction and comprising:

20 a sole plate having a first lateral edge, a second lateral edge, an outer face, an inner face bearing a caisson, said caisson leaving free, on the inner face of the sole plate, a first lateral zone, defined between the first lateral edge and the caisson, and a second lateral zone, defined between the second lateral edge and the caisson.

25 The first lateral edge is therefore disposed between the outer face and the inner face bearing the caisson.

One known problem is that, during the concreting step, the concrete has a tendency to bypass the formwork element. After hardening, the concrete adheres to the formwork element, which makes its extraction from
30 the trench difficult.

To solve this problem, EP 1 039 038 teaches the use of a form stripping assistance device cooperating with the sole plate.

This form stripping assistance device consists of sacrificial rectangular elements which are disposed along the lateral edges of the sole
35 plate, the lateral edges consisting of the end edges of the sole plate.

To accomplish form stripping, it is known to use a form stripping device, known per se, provided with form stripping hooks which are moved along the first and second lateral edges to detach the formwork element from the concrete.

- 5 If the rectangular elements described in EP 1 039 038 give complete satisfaction for trenches of small and medium depth, the inventors have noted that they were less effective for trenches of great depth, i.e. more than 40 meters.

10 Object and summary of the invention

One aim of the invention is to propose a formwork element allowing the facilitation of the step of stripping forms after concreting.

- 15 To this end, the form stripping assistance device of the formwork element according to the invention includes at least one first sacrificial section comprising a first portion disposed on the first lateral zone of the inner face of the sole plate.

- 20 The first portion is therefore a first sacrificial section portion which extends over the first lateral zone of the inner face of the sole plate, between the first lateral edge and the caisson. The first lateral zone is substantially parallel to the outer face.

The first sacrificial section also extends in the longitudinal direction of the sole plate.

- 25 The first portion, which preferably extends in the longitudinal direction of the sole plate, allows avoiding having the concrete adhere to the inner face at the first lateral zone. In the absence of a first sacrificial section within the meaning of the invention, the first lateral zone of the inner face has a large adhesion surface with the concrete, which makes difficult the disengagement of the formwork element. The first sacrificial portion, which is destroyed during the passage of the hooks of the form stripping device, has the effect of preventing, or at the very least
- 30 substantially limiting, the adhesion of the concrete to the first lateral zone, which consequently facilitates the subsequent disengagement of the formwork element.

- 35 Preferably, the first portion has a width, considered in a direction transverse to the longitudinal direction of the formwork element, which is greater than one-third of the width of the first lateral zone. Preferably, the

width of the first portion is greater than half the width of the first lateral zone. Also preferably, the first portion extends substantially until the caisson. One benefit is to be able to cover the largest possible surface at the internal face of the sole plat in order to facilitate the subsequent form stripping of the formwork element.

To accomplish the form stripping of the formwork element according to the invention, a form stripping device provided with a first hook formed to engage between the concrete and the inner face of the sole plate is used, within the thickness of the first portion, so as to be able to destroy the first portion of the first sacrificial section during the vertical movement of the form stripping device.

Advantageously, the first sacrificial section also includes a second portion disposed on the outer face of the sole plate. The second portion is a second sacrificial section portion.

The inventors have noted, moreover, that during concreting of a trench of great depth, the concrete can have a tendency to bypass the sole plate and come into contact with its outer face. After hardening and in the absence of a form stripping assistance device according to the invention, the concrete then adheres to the sole plate and makes difficult the withdrawal of the form stripping element from the trench.

The second portion allows preventing the concrete, having bypassed the first lateral edge of the sole plate from adhering to the outer face of the sole plate. Thanks to the invention, the concrete which bypasses the first lateral edge of the sole plate will, at most, adhere against the second portion of the first sacrificial element. This second portion, to which the concrete may possibly have adhered, will then be destroyed during subsequent digging of the adjacent trench. The excavated fragments of concrete and of the second portion will then be removed by pumping during the excavation of the adjacent trench. This has the effect of reducing the adhesion between the concrete and the sole plate, which facilitates the subsequent extraction of the formwork element from the trench.

Preferably, considered in a direction transverse to the longitudinal direction, the width of the second portion is greater than the width of the first portion. One benefit is to cover a surface of the outer face which is greater than the surface of the first lateral zone.

Also preferably, the thickness of the second portion is substantially equal to the thickness of the first portion.

Advantageously, the first sacrificial section also includes a third portion disposed along the first lateral edge, the third portion being fastened to the first and second portions of the first sacrificial section. The third portion is a third sacrificial section portion.

The third portion has the effect of preventing the concrete from adhering to the first lateral edge. It also facilitates the engagement of the form stripping hands.

Preferably, the first form stripping hand of the form stripping device is formed to move vertically within the thickness of the third portion, which has the effect of destroying the third portion during the vertical movement of the form stripping device. This allows detaching the first vertical edge of the concrete, and consequently, facilitating the withdrawal of the formwork element from the trench.

According to a preferred embodiment, the first, second and third portions form a single identical part.

The first sacrificial element is therefore preferably one-piece. One benefit is to be able to easily and rapidly assemble the first sacrificial element to the sole plate. This also facilitates the manufacture of the first sacrificial element.

Preferably, the thickness of the third portion is substantially equal to the thickness of the first portion.

Also preferably, the distance between the first and second portions is substantially equal to the thickness of the sole plate.

It will therefore be understood that the first sacrificial element clasps the first lateral edge of the sole plate, which allows preventing the concrete from adhering to the sole plate.

Preferably, considered in a direction transverse to the longitudinal direction, the width of the second portion is greater than one-third and less than half the width of the sole plate. One benefit is to leave a passage for the flow of mud during the placement of the formwork element in the trench.

Advantageously, the first sacrificial section consists of a brittle material, so that it can easily be destroyed or shredded by the form stripping device. It is also understood that the first sacrificial section, and more

precisely the second portion, is destroyed during the digging of the adjacent trench.

Preferably, the brittle material has a density comprised between 10 and 60 kg/m³, preferably comprised between 15 and 45 kg/m³.

5 Still preferably, the first sacrificial section is made of polystyrene.

In other words, at least the first section consists of a brittle material, polystyrene for example.

Advantageously, the formwork element according to the invention also includes a fastening device for fastening the first sacrificial section to
10 the sole plate.

Preferably, the fastening device includes one or more slender elements, such as wires, straps or small cross-section cables, which clasp the formwork element in order to hold the first sacrificial section with the sole plate during the introduction of the formwork element into the trench and during concreting. Preferably, shims are disposed between the caisson
15 and the slender elements in order to avoid crushing of the seal. The fastening devices are dimensioned to be split during the passage of the form stripping device or during the digging with mud of the adjacent trench. The residues are removed from the trench by pumping or by a skip during the
20 excavation of the adjacent trench.

According to one variant, the fastening device also includes a holding device to hold the first sacrificial section against the outer face of the formwork element. The fastening device consists of a brittle or splittable material. This holding device comprises one or more plates, of wood for
25 example, extending along the second portion.

Also preferably, the holding device includes a spacer portion to maintain a longitudinal space between two adjacent formwork elements. One benefit is to ensure the alignment of the sections while reducing the necessary quantity of polystyrene.

30 According to another variant, the fastening device includes at least one breakable rod which passes through and holds the sole plate in a sandwich together with the first and second portions of the first sacrificial section, the rod extending perpendicular to the outer face of the sole plate.

According to one advantageous embodiment, the formwork element
35 also includes at least one second sacrificial section including a first portion disposed on the second lateral zone.

It is therefore understood that the first portions of the first and second sacrificial sections extend on either side of the caisson, preferably in the longitudinal direction of the formwork element.

5 Preferably, the second sacrificial section also includes a second portion disposed on the outer face of the sole plate. The second portion of the second sacrificial section is preferably identical to the second portion of the first sacrificial section.

Preferably, the second portions of the first and second sections cover at least two-thirds of the width of the outer face.

10 Preferably, the second portions of the first and second sacrificial sections have two lateral sides, parallel to the longitudinal direction, the two lateral sides being spaced from one another in a direction transverse to the longitudinal direction so as to create a longitudinal channel between the first and second sacrificial sections.

15 This longitudinal channel is therefore delimited between the two lateral sides and the outer face. It allows the flow of mud during the placement of the formwork element in the trench.

As disclosed above, the second portions are destroyed during the digging of the adjacent trench and removed from the trench by pumping.

20 Preferably, the second sacrificial section includes a third portion disposed along the second lateral edge, the third portion being fastened to the first and second portions of the second sacrificial section. The second sacrificial portion is preferably one-piece.

25 The second sacrificial section is preferably identical to the first sacrificial section, the first and second sacrificial sections extending on either side of the caisson.

Advantageously, the form stripping assistance device includes a plurality of first sacrificial sections disposed one after the other in the longitudinal direction of the formwork element.

30 Preferably, the first sacrificial sections extend over substantially the entire length of the sole plate.

Advantageously, and in known fashion, the formwork element also includes a seal which is fastened to the caisson. The seal has a first portion initially disposed at the inside of the caisson and a second portion extending
35 outside the caisson. The seal is substantially perpendicular to the outer face of the sole plate. The second portion of the seal is engaged with the

concrete of the first panel after hardening. During withdrawal of the formwork element from the trench, the seal remains in the trench integral with the first panel, the first portion then extending into the adjacent trench.

5 The invention also relates to a formwork system including a formwork element according to the invention, and a form stripping device including at least one first form stripping hand configured to be moved longitudinally along the first lateral zone of the inner face of the sole plate so as to break at least the first portion of the first sacrificial section.

10 According to one advantageous embodiment, the form stripping device is mounted at the end of a digging tool, a skip for example.

The form stripping device preferably includes a second form stripping hand, symmetric with respect to the first form stripping hand, so as to destroy simultaneously the first portions of the first and second sacrificial sections during the vertical movement of the form stripping hands.

15 The form stripping device also comprises a movement device for moving the first form stripping hand vertically in the trench along the two lateral sides of the sole plate.

20 The invention also relates to a form stripping method of a formwork element according to the invention, said formwork element being placed at the end of a first trench filled with concrete, method in which, after hardening, a form stripping hand is moved along the length of the sole plate so that the form stripping hand breaks at least the first portion of the first sacrificial section, then the formwork element is withdrawn from the trench.

25 Preferably, before movement of the form stripping hand, a second trench is dug under mud adjacent to the first trench while cutting away the second portions of the first and second sacrificial sections, the segment fragments then being removed by pumping or by the skip during the excavation of the adjacent trench.

30 Finally, the invention relates to a method for creating a molded wall in the ground, comprising the following steps:

- a first vertical trench of rectangular cross section is dug in the ground, the first trench having a first longitudinal end;
- a formwork element according to the invention is placed in the first trench, in proximity to the longitudinal end;
- 35 - the first trench is filled with concrete so as to form a first concrete panel;

- after the hardening of the first concrete panel, a second trench is dug adjacent to the first trench, while cutting away the second portion of the first sacrificial element;
- a first form stripping hand is moved vertically within the thickness of the first portion so as to break said first portion;
- the formwork element is withdrawn from the first trench;
- the second trench is filled with concrete so as to form a second concrete panel.

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Brief description of the drawings

The invention will be better understood upon reading the description that follows of an implementation method given by way of a non-limiting example, with reference to the appended drawings, in which:

- figure **1** is a perspective view of an embodiment of a formwork element according to the invention provided with a form stripping assistance device;
- figure **2** is an exploded view of the formwork element of figure **1**, illustrating the placement of the first and second sacrificial sections;
- figure **3** is a top view of the formwork element of figure **1**;
- figure **4** is a front view of the formwork element of figure **1** which includes several form stripping assistance devices;
- figure **5** is a back view of the formwork element of figure **4**; and
- figures **6A** to **6I** illustrate the method for creating a molded wall according to the invention by means of a formwork system according to the invention.

Detailed description of the invention

- One embodiment of a formwork element **10** conforming to the present invention will be described by reference to figures **1** to **5**. As will be explained in more detail below, the formwork element **10** is intended to be disposed at one end of a vertical trench formed in the ground **S**. As can be noted in figure **1**, the formwork element **10** extends in a longitudinal direction **A**. In operation, the longitudinal direction **A** is vertical.

The formwork element **10** includes a sole plate **12**, preferably made of steel, which has a first lateral edge **14** and a second lateral edge **16**, the first and second lateral edges **14**, **16** also extending in the longitudinal direction **A**. Furthermore, the sole plate **12** has an outer face **18** which is planar. In this example, the sole plate has a length of 700 cm and a width of 144 cm. The outer and inner faces are substantially parallel.

The sole plate also has an inner face **20**, more visible in figure **3**, which bears a caisson **22**. This caisson **22** is, in this example, welded to the inner face of the sole plate. The caisson **22** has the shape of a bell which extends in the longitudinal direction **A**, along substantially the entire length of the sole plate. The caisson **22** has a vertex **22a** distant from the inner face of the sole plate, which comprises a seal carrier **24** to which is fastened a watertight seal **26** which extends in the longitudinal direction **A** of the sole plate. This watertight seal **26** has a first portion **26a** which extends inside the caisson **22**, and a second portion **26b** which extends outside the caisson. More exactly, the first portion **26a** is inserted into a longitudinal slot **28** which is formed in the seal carrier **24**.

As can be noted in figure **3**, the caisson **22** leaves free, on the inner face **20** of the sole plate **12**, a first lateral zone **30** which is defined between the first lateral edge **14** and the caisson **22**. The caisson **22** also leaves free on the inner face **20** of the sole plate a second lateral zone **32** which is defined between the second lateral edge **16** and the caisson **22**. The first and second lateral zones **30**, **32**, also visible in figure **5**, are parallel to the outer face **18**.

In this example, the first and second lateral zones **30**, **32** are planar and extend in the longitudinal direction **A**. The width **I** of the sole plate, considered in a direction transverse to the longitudinal direction **A**, is on the order of 144 centimeters, while the widths **I₁**, **I₂** of the first and second lateral zones is on the order of 37 centimeters.

According to the invention, the formwork element **10** also includes a form stripping assistance device **40** which cooperates with the sole plate **12**. This form stripping assistance device **40** includes a plurality of first sacrificial sections **42**, as well as a plurality of second sacrificial sections **44**. The first and second sacrificial sections, when they are mounted on the sole plate, extend in this example in the longitudinal direction of said sole plate.

As can be noted in figure **2**, the first and second sacrificial sections **42**, **44** have substantially the same shape and the same dimensions, so that we will limit ourselves to describing in detail the first sacrificial section **42**.

5 It is understood, by reference to figures **1** and **2** that the first sacrificial section **42** comprises a first portion **50**, a second portion **52**, parallel to the first portion **50**, and a third portion **54** which is perpendicular to the first and second portions **50**, **52**. Each of the first and second portions **50**, **52**, **54** has the shape of a plate which extends in a longitudinal direction
10 **B**, which is parallel to the longitudinal direction **A** when the first section is mounted to the sole plate.

The first portions are disposed over the first lateral zone **30** of the inner face **20** of the sole plate **12**.

15 In this example, the first, second and third portions form a single part. In other words, the first sacrificial section **42** is one-piece. The same is true of the second sacrificial section **44**.

In this example, the first sacrificial section **42** consists of a brittle material, in this example, it is polystyrene, the density of which is comprised between 15 and 45 kg/m³.

20 Furthermore, it is noted that the spacing **e₂** between the first and second portions **50**, **52** of the first sacrificial section **42** corresponds substantially to the thickness **e₁** of the sole plate **12**.

By means of the detail of figure **2**, it is noted that the first portion **50** has a width **d₁**, considered in a direction perpendicular to the third portion **54**. Likewise, the portion **52** has a width **d₂**, considered in a
25 direction perpendicular to the third portion **54**. The width **d₂** of the second portion **52** is larger than the width **d₁** of the first portion **50**.

More precisely, the width **d₁** of the first portion **50** is configured in such a manner that, when the first sacrificial section **42** is mounted on the
30 sole plate **12**, the first portion **50** covers the first lateral zone **30**.

By means of figure **3**, it is understood that the same is true of the first portion **50'** of the second sacrificial section **44**.

Referring to figures **3** and **4**, it is noted that when the first sacrificial section is mounted on the sole plate, the second portion **52** is disposed on
35 the outer face of said sole plate. More precisely, the first sacrificial section **42** covers at least one-third of the width **l** of the sole plate **12**.

The same is true of the second portion **52'** of the second sacrificial section **44**.

Referring to figures **3** and **4**, it is noted that the second portions **52**, **52'** of the first and second sacrificial sections **42**, **44** have two lateral sides **52a**, **52a'**, which are parallel to the longitudinal direction **A**. These two lateral sides **52a**, **52a'** are distant from one another – in a direction transverse to the longitudinal direction **A** – by a distance **f**, in this example on the order of 10 cm. This allows creating a longitudinal channel **60** between the second portions **52**, **52'** of the first and second sacrificial sections **42**, **44**.

This longitudinal channel **60** facilitates the flow of the digging mud during the placement of the formwork element in the trench.

Referring again to figures **2** and **3**, it is noted that the third portion **54** of the first sacrificial section **42** extends along the first lateral edge **14** when the first sacrificial section **42** is mounted to the sole plate **12**. In this example, the third portion is supported against the first lateral edge of the sole plate.

Likewise, the third portion **54'** of the second sacrificial section **44** is disposed along the second lateral edge **16** when the second sacrificial section is mounted on the sole plate **12**.

To retain the first and second sacrificial sections **42**, **44** with the sole plate **12**, the formwork element **10** also includes a fastening device **70**, which, in this example, appears in the form of straps **72** which clasp the sole plate, the caisson and the sacrificial sections. In the example illustrated, two straps **72** have been provided to retain a pair consisting of a first sacrificial section and a second sacrificial section. Naturally, without departing from the scope of the present invention it is possible to provide a different number of straps, particularly depending on the length of the sacrificial sections. As illustrated in figure **3**, in order to protect the watertight seal **26** against crushing, it is possible to provide shims **73** disposed on either side of the seal between the caisson **22** and the straps **72**.

Referring to figures **4** and **5**, it is noted that the formwork element includes a plurality of first sacrificial sections **42** which are disposed one after the other in the longitudinal direction **A**, as well as a plurality of second sacrificial sections **44** which are also disposed one after the other in the

longitudinal direction **A**. In this non-limiting example, the pluralities of first and second sacrificial sections **42**, **44** are disposed end to end. By means of figures **6A** to **6I**, an example of a method for creating a molded wall **100** in the ground **S** will now be described. In this example, the molded wall **100** consists of two concrete panels. Without departing from the scope of the present invention, the molded wall obtained by the implementation of the method according to the invention can obviously include additional concrete panels.

These figures therefore illustrate the creation of a molded wall in top view, the plane of the sheet corresponding to the horizontal plane.

In figure **6A**, a first trench **102** is illustrated, which is dug into the ground **S** by means of a machine known per se, for example a rotary cutting drum cutter. Digging is carried out under mud, i.e. digging mud is injected into the trench during the accomplishment of the excavation, while pumping the mud in order to remove the fragments of excavated soil.

The first trench **102** has a substantially rectangular shape which conventionally includes a first longitudinal end **104**. In figure **6B**, the first trench **102** is illustrated in which has been inserted a formwork element **10** according to the present invention. As is observed in figure **6B**, the longitudinal direction of the formwork element **10** extends vertically, while the outer face **18** of the sole plate **12** is directed toward the end **104** of the first trench **102**.

In figure **6**, the first concrete panel is illustrated, obtained by filling the first trench **102** with concrete.

During this step, concrete is substituted for the mud **102**. Generally, and as shown schematically in figure **6C**, it is possible for concrete to bypass the first and second lateral edges **14**, **16** of the sole plate **12** to lodge between the formwork element **10** and the end **104** of the first trench **102**. The thin layer of concrete which can interpose itself between the formwork element and the end **104** of the first trench **102** is labeled **106**.

After the hardening of the first concrete panel, a second trench **110** is dug adjacent to the first trench **102**. As can be understood by means of figure **6D**, the second trench **110** is dug in the continuation of the end **104** of the first trench **102**. During the digging operation of the second trench **110**, the digging tool used cuts away the second portions **52**, **52'** of the first and second sacrificial elements **42**, **44** so that, during the digging of

the second trench, the second portions **52, 52'** are destroyed and removed from the trench by pumping. There too, the digging is accomplished under mud.

Then, by means of a form stripping device including a first form stripping hand **120** and a second form stripping hand **122**, illustrated in figure **6E**, a form stripping method is implemented to strip the formwork element.

Considered in a substantially horizontal plane, each of the first and second hands has the shape of a hook composed of a first part and a second part perpendicular to the first part. The first part is configured to engage in the thickness of the first portion **50**, while the second part is configured to engage in the thickness of the third portion **54**.

Within the meaning of the invention, the formwork element and the form stripping device constitute a formwork system.

To this end, the first and second form stripping hands **120, 122** are lowered vertically along the first and second lateral zones of the sole plate **12** from the ground surface, so as to engage in the thickness of the first and third portions, this in order to break said first and third portions of the first and second sacrificial sections **42, 44**. The passage of the first and second form stripping hands **120, 122** over the inner face of the sole plate is facilitated by the presence of the first portions **50, 50'** of the first and second sacrificial sections **42, 44** which are rapidly shredded during the movement of the first and second form stripping hands. Also accomplished, as illustrated in figure **6F**, is a traction movement in a direction perpendicular to the outer face **18** so as to detach the formwork element **10** from the concrete panel. This also has the effect of freeing the seal **28**, the second portion **26b** of which remains integral with the first concrete panel.

The formwork element is then withdrawn from the ground, so that the mud fills the space which was previously occupied by the formwork element **10**, as illustrated in figure **6G**.

Then, the second trench **104** is filled with concrete so as to obtain, after hardening, a second concrete panel. Thus a molded wall is obtained consisting of the first and second adjacent concrete panels. It is noted that the first portion **28a** of the seal **28** engages with the hardened concrete of

the second portion **104**, in order to form the watertight seal between the two concrete wall elements.

CLAIMS

1. A formwork element (10) for a molded wall panel end, said formwork element (10) extending in a longitudinal direction (A) and comprising:

a sole plate (12) having a first lateral edge (14), a second lateral edge (16), an outer face (18), an inner face (20) bearing a caisson (22), said caisson (22) leaving free, on the inner face (20) of the sole plate (12), a first lateral zone (30), defined between the first lateral edge (14) and the caisson (22), and a second lateral zone (32), defined between the second lateral edge (16) and the caisson (22);

a form stripping assistance device (40) cooperating with the sole plate (12);

said formwork element being characterized in that the form stripping assistance device includes at least one first sacrificial section (42) comprising a first portion (50) disposed on the first lateral zone of the inner face (20) of the sole plate.
2. The formwork element according to claim 1, characterized in that the first sacrificial section (42) also includes a second portion (52) disposed on the outer face of the sole plate.
3. The formwork element according to claim 2, characterized in that, considered in a direction transverse to the longitudinal direction, the width (d1) of the first portion (50) is greater than one-third of the width (l₁) of the first lateral zone, preferably greater than half the width of the first lateral zone.
4. The formwork element according to claim 2 or 3, characterized in that the first sacrificial section also includes a third portion (54) disposed along the first lateral edge (14), the third portion being fastened to the first and second portions of the first sacrificial section.

5. The formwork element according to claim 4, characterized in that the first (50), second (52) and third (54) portions form a single identical part.
- 5 6. The formwork element according to any one of the preceding claims, characterized in that, considered in a direction transverse to the longitudinal direction (A), the width (d_2) of the first portion (50) is greater than one-third of the width of the sole plate.
- 10 7. The formwork element according to any one of the preceding claims, characterized in that the first sacrificial section (42) consists of a brittle material.
- 15 8. The formwork element according to claim 7, characterized in that the brittle material has a density comprised between 10 and 60 kg/m³, preferably comprised between 15 and 45 kg/m³.
- 20 9. The formwork element according to claim 7 or 8, characterized in that the first (70) sacrificial section (42) is made of polystyrene.
- 25 10. The formwork element according to any one of the preceding claims, characterized in that it also includes a fastening device (70) for fastening the first sacrificial section to the sole plate.
- 30 11. The formwork element according to any one of the preceding claims, characterized in that it also includes at least one second sacrificial section (44) including a first portion (50') disposed on the second lateral zone (32).
- 35 12. The formwork element according to claim 11, characterized in that the second sacrificial section (44) also includes a second portion (52') disposed on the outer face (18) of the sole plate (44).
- 35 13. The formwork element according to claims 2 and 12, characterized in that the second portions (52, 52') of the first and second sacrificial sections have two lateral sides (52a, 52a'), parallel to the longitudinal direction (A), the two lateral sides being distant from one another in

a direction transverse to the longitudinal direction so as to create a longitudinal channel (60) between the second portions (52, 52') of the first and second sacrificial sections.

- 5 14. The formwork element according to claim 12 or 13, characterized in that the second sacrificial section (44) includes a third portion (54') disposed along the second lateral edge (16), the third portion being fastened to the first and second portions of the second sacrificial section.
- 10 15. The formwork element according to any one of the preceding claims, characterized in that the form stripping assistance device (10) includes a plurality of first sacrificial sections (42) disposed in the longitudinal direction (A).
- 15 16. A formwork system including a formwork element according to any one of the preceding claims, and a form stripping device including at least one first form stripping hand (120) configured to be moved longitudinally along the first lateral zone (30) of the inner face of the sole plate (12) so as to break at least the first portion of the first sacrificial section (42, 42').
- 20 17. A form stripping method of a formwork element according to any one of claims 1 to 15, said formwork element being placed at the end of a trench filled with concrete, method in which a form stripping hand is moved along the length of the sole plate so that the form stripping hand breaks at least the first portion of the first sacrificial section, then the formwork element is withdrawn from the trench.
- 25 18. A method for creating a molded wall (100) in the ground (S), comprising the following steps:
 - a first vertical trench of rectangular cross section is dug in the ground, the first trench having a first longitudinal end;
 - a formwork element according to any one of claims 1 to 15 is placed in the first trench, in proximity to the longitudinal end, the first sacrificial section also including a second portion disposed on the outer face of the sole plate;
- 30 35

- the first trench is filled with concrete so as to form a first concrete panel;
 - after the hardening of the first concrete panel, a second trench is dug adjacent to the first trench, while cutting away the second portion of the first sacrificial element;
 - a first form stripping hand is moved vertically within the thickness of the first portion so as to break said first portion;
 - the formwork element is withdrawn from the first trench;
 - the second trench is filled with concrete so as to form a second concrete panel.
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