

ADEKA ULTRASEAL MC-2010M

ADEKA ULTRASEAL P-201

ULTRA RING

Hydrostatic head test results

ASAHI DENNKA Co., Ltd.

ADEKA ULTRASEAL MC-2010M, P-201 and ULTRA RING was developed as a waterstop. These are water swelling materials.

1. Purpose of the test

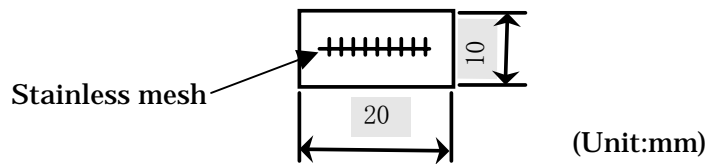
- 1) To evaluate of hydrostatic head performance of construction joints of ADEKA ULTRASEAL MC-2010M and P-201.
- 2) To evaluate of hydrostatic head performance of separators of ADEKA ULTRA RING.

2. Test contents

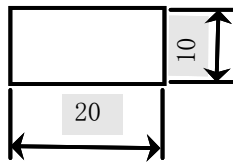
2-1 Production of test pieces

2-1-1 Test samples

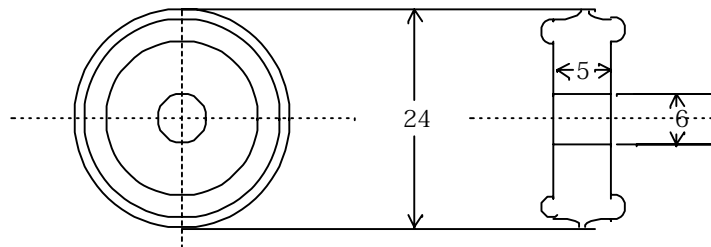
- (A) ADEKA ULTRASEAL MC-2010M (Fixed form water swelling rubber)
(cross section of waterstop)



- (B) ADEKA ULTRASEAL P-201 (Water swelling One-component elastic sealant)
(cross section of waterstop)

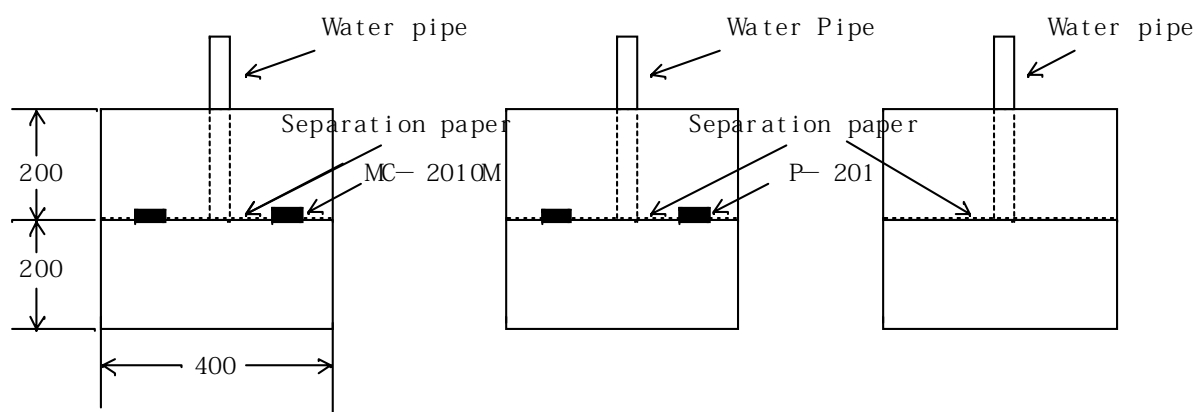


- (C) ULTRA RING 3/8



2-1-2 Shape of test pieces

For construction joints

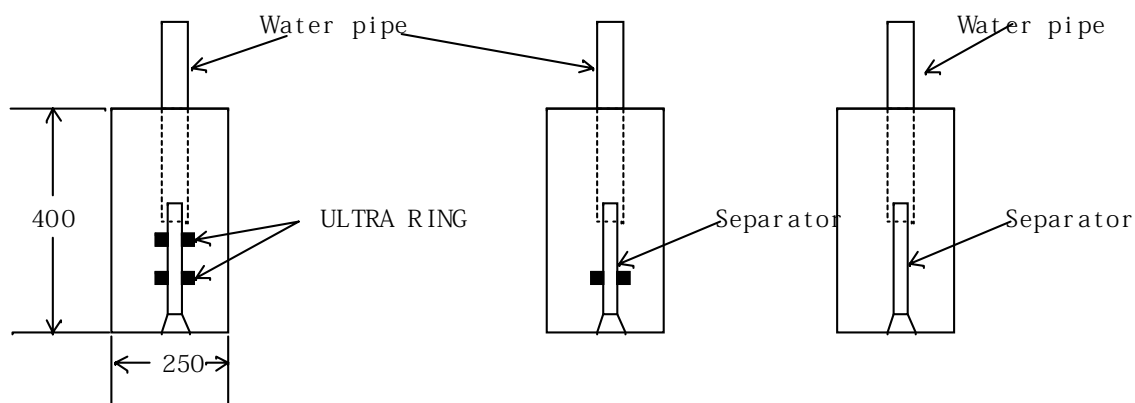


No. 1 : MC-2010M

No. 2 : P-201

No. 3 : Blank

For separator



No. 4 : ULTRA RING 2 Pieces

No. 5 : ULTRA RING 1 Piece

No. 5 : Blank

2-1-3 Fabrication sequence of test piece

For construction joints (test piece No. 1 - 3)

(1) Apply the first concrete

Apply the first concrete, its thickness of 20cm, and curing 1 day.

(2) ULTRASEAL installation

Refuse and laitance are removed. Apply adhesive to concrete and ULTRASEAL, and allow to set until tacky. Press ULTRASEAL firmly into place.

(3) Apply the second concrete

To separate first concrete and second concrete, separation paper was put on the upper surface of first concrete except the bonding area of ULTRASEAL. (In the No.3 Blank, it was the entire upper surface), water pipe was set, and apply the second concrete.

For separator (test piece No. 4 - 6)

(1) ULTRARING installation

ULTRARING was installed on the separator, and water pipe was set in connected type frame.

(2) Apply the concrete

Both test pieces No.4 - 6 apply the concrete

2-2 Cure and filled by water

After applied concrete, took curing 1 day. The inside of the test piece was filled by water, and it took cure for 14 days.

2-3 Test method

2-3-1 Pressure test

The pressurizing water was injected with the pressurizing pump. Keep every 3min. for every 0.1MPa increase. When no leak is confirmed, increase additional 0.1MPa again until 0.5MPa. The presence of the water leak was confirmed by watching.

2-3-2 Judgments

Water leak is leakage pressure.

2-4 Destruction of test pieces

After hydrostatic head test, the test piece was destroyed. and confirmed water swelling condition of test samples.

3. Test result

Water pressure	For construction joints		
	No1 MC-2010M	No2 P-201	No3 Blank
0.1 (MPa)	No leakage	No leakage	Leaked
0.2 (MPa)	No leakage	No leakage	
0.3 (MPa)	No leakage	No leakage	
0.4 (MPa)	No leakage	No leakage	
0.5 (MPa)	No leakage	No leakage	
Destruction of test pieces	Test samples were expanded and these have dug into to small holes.		

Water pressure	For separator		
	No4 ULTRA RING 2 pieces	No5 ULTRA RING 1 piece	No6 Blank
0.1 (MPa)	No leakage	No leakage	Leaked
0.2 (MPa)	No leakage	No leakage	
0.3 (MPa)	No leakage	No leakage	
0.4 (MPa)	No leakage	No leakage	
0.5 (MPa)	No leakage	No leakage	
Destruction of test pieces	Water stopped completely in the place of ULTRARING.		

4. Summary

Both ULTRASEAL MC-2010M, P-201 and ULTRARING 3/8 were no leak at 0.5 MPa They were expanded and these have dug into to small holes.

Both Blanks leaked at 0.1 MPa.