CLAIMS

[Claim 1] A method for monitoring a portion (3) of a structure (1) implementing a control station (100) configured to control at least one ultrasonic non-destructive testing device (300) through a remote network (200), each ultrasonic non-destructive testing device (300) comprising a multi-element ultrasonic sensor (310) disposed on a surface of the portion (3) of the structure (1), , the structure (1) being an adsorber and the portion (3) being a wall of the adsorber, the method comprising, for each ultrasonic non-destructive testing device (300), the following steps of:

- A) the control station (100) sending a first measurement request to the non-destructive testing device (300), at the beginning of a filling phase of the adsorber;
- B) the control station (100) receiving a first plurality of measurement data (500) from the non-destructive testing device (300), the first plurality of measurement data (500) being measured by the multi-element ultrasonic sensor (310) of the ultrasonic non-destructive testing device (300);
- C) the control station (100) constructing a first mapping of the portion (3) of the structure (1) from the first plurality of measurement data (500);
- D) subsequently to sending the first measurement request, the control station (100) sending a second measurement request to the non-destructive testing device (300), at the end of the filling phase of the adsorber;
- E) the control station (100) receiving a second plurality of measurement data (500) from the non-destructive testing device (300), the second plurality of measurement data (500) being measured by the multi-element ultrasonic sensor (310) of the ultrasonic non-destructive testing device (300);
- F) the control station (100) constructing a second mapping of the portion of the structure, from the second plurality of measurement data (500); and

- G) the control station (100) comparing the first mapping and the second mapping.

[Claim 2] The method according to the preceding claim, wherein the remote network (200) is wireless.

[Claim 3] The method according to any of the preceding claims, wherein the first measurement request includes at least one first information selecting a measurement mode.

[Claim 4] The method according to the preceding claim, wherein the first measurement request includes at least one first operating parameter of the measurement mode.

[Claim 5] The method according to any of the preceding claims, wherein the second measurement request includes at least one second information selecting the measurement mode.

[Claim 6] The method according to the preceding claim, wherein the second measurement request includes at least one second operating parameter of the measurement mode.

[Claim 7] The method according to any of the preceding claims, wherein if at least one parameter representative of the comparison between the first mapping and the second mapping deviates from a threshold value, the method includes a step of triggering an indicator.

[Claim 8] A method of measurement in a portion (3) of a structure (1) implementing an ultrasonic non-destructive testing device (300) configured to be controlled by a control station (100) through a remote network (200), the ultrasonic non-destructive testing device (300) comprising a multi-element ultrasonic sensor (310) disposed on a surface of the portion (3) of the structure (1), the structure (1) being an adsorber and the portion (3) being a wall of the adsorber, the method comprising the following steps of:

- I) the ultrasonic non-destructive testing device (300) receiving a first measurement request from the control station (100) at the beginning of a filling phase of the adsorber;

- J) the multi-element ultrasonic sensor (310) measuring a first plurality of measurement data (500);
- K) the ultrasonic non-destructive testing device (300) sending the first plurality of measurement data to the control station (100);
- L) subsequently to receiving the first measurement request, the ultrasonic non-destructive testing device (300) receiving a second measurement request from the control station (100) at the end of the filling phase of the adsorber;
- M) the multi-element ultrasonic sensor (310) measuring a second plurality of measurement data (500);
- N) the ultrasonic non-destructive testing device (300) sending the second plurality of measurement data to the control station (100).

[Claim 9] The measuring method according to the preceding claim, wherein the measuring steps J and M comprise the following sub-steps of:

- for each ultrasonic element (311) of the multi-element ultrasonic sensor (310):
  - U) the ultrasonic element (311) of the multi-element ultrasonic sensor generating an incident ultrasonic wave (11) propagating in the portion (3) of the structure (1);
  - V) all the ultrasonic elements (311) of the multi-element ultrasonic sensor (310) measuring a plurality of measurement data (500), the plurality of measurement data (500) corresponding to the reception of a reflected ultrasonic wave (12) on each ultrasonic element (311) of the multi-element ultrasonic sensor (310).

[Claim 10] A control station (100) configured to perform the steps of the method according to any of claims 1 to 7.

[Claim 11] An ultrasonic non-destructive testing device (300) comprising a multi-element ultrasonic sensor and configured to perform the steps of the method according to any of claims 8 to 9.

[Claim 12] A testing system (400) comprising a control station (100) according to claim 10 and at least one ultrasonic non-destructive testing device (300) according to claim 11.

[Claim 13] A use of the testing system (400) according to the preceding claim, wherein the multi-element ultrasonic sensor (310) is disposed on a surface of a wall of an adsorber.