Claims

1. An oil and gas pipe having a unitary pipe structure, comprising:

a first end portion comprising a first corrosion-resistant material;

a second end portion comprising a second corrosion-resistant material; ~~and~~

a middle portion located between the first end portion and the second end portion;

wherein the middle portion is a major portion of the pipe and comprises a material that is different from the first and second corrosion-resistant materials~~.~~; and wherein the first portion, the second portion and the middle portion are single walled.

~~2. The pipe of claim 1, wherein the first end portion, second end portion and middle portion form a unitary pipe structure.~~

~~3.~~2. The pipe of claim 1 ~~or 2~~, wherein the first corrosion-resistant material is the same as the second corrosion-resistant material.

~~4.~~3. The pipe of claim 1 ~~or 2~~, wherein the first corrosion-resistant material is different from the second corrosion-resistant material.

~~5.~~4. The pipe of any one of the preceding claims, wherein the material of the middle portion and the first and second corrosion-resistant materials are metals and/or metal alloys.

~~6.~~5. The pipe of claim ~~5~~4, wherein the material of the middle ~~section~~ portion comprises mild steel.

~~7.~~6. The pipe of claim ~~5~~4, wherein the first and second corrosion-resistant materials comprise stainless steel, zinc, titanium or a titanium alloy.

~~8.~~7. The pipe of any one of the preceding claims, further comprising a corrosion-resistant coating on an inner surface of the middle portion.

~~9.~~8. The pipe of any one of the preceding claims, further comprising a corrosion-resistant coating on an outer surface of the middle portion.

~~10.~~9. The pipe of claims ~~8~~ 7 or ~~9~~8, wherein the corrosion-resistant coating covers at least a portion of an inner and/or outer surface of the first end portion and/or at least a portion of an inner and/or outer surface of the second end portion.

~~11.~~10. The pipe of any one of claims ~~8~~ 7 to ~~10~~9, wherein the corrosion-resistant coating comprises cement, stainless steel, zinc, titanium or a titanium alloy.

~~12.~~11. The pipe of any one of the preceding claims, wherein the first end portion, second end portion and middle portion are arranged coaxially in series.

~~13. The pipe of any one of the preceding claims, wherein the pipe is an oil and gas pipe.~~

~~14.~~12. A method of joining pipes, comprising:

a. providing two or more pipes according to any one of claims 1 to ~~13~~11; and

b. ~~joining~~ welding the pipes to form a corrosion-resistant joint between one end portion and another end portion.

~~15.~~13. The method of claim ~~14~~12, wherein the step of ~~joining~~ welding the pipes makes use of heat.

~~16.~~14. The method of claim ~~15~~13, wherein the step of ~~joining~~ welding the pipes comprises friction welding or arc welding.

~~17.~~15. The method of any one of claims ~~14~~ 12 to ~~16~~14, further comprising the step of coating a corrosion-resistant coating on an inner surface of the middle portion.

~~18.~~16. The method of any one of claims ~~14~~ 12 to ~~17~~15, further comprising the step of coating a corrosion-resistant coating on an outer surface of the middle portion.

~~19.~~17. The method of claim ~~17~~ 15 or ~~18~~16, further comprising the step of coating the corrosion-resistant coating on at least a portion of an inner and/or outer surface of the first end portion and/or at least a portion an inner and/or outer surface of the second end portion.

~~20.~~18. The method of any one of claims ~~17~~ 15 to ~~19~~17, wherein the corrosion-resistant coating comprises cement, stainless steel, zinc, titanium or a titanium alloy.

~~21.~~19. The method of any one of claims ~~14~~ 12 to ~~20~~18, further comprising the step of placing an intermediate corrosion-resistant portion between one pipe and another pipe.

Claims

1. An oil and gas pipe having a unitary pipe structure, comprising:

   a first end portion comprising a first corrosion-resistant material;

   a second end portion comprising a second corrosion-resistant material;

   a middle portion located between the first end portion and the second end portion;

   wherein the middle portion is a major portion of the pipe and comprises a material that is different from the first and second corrosion-resistant materials; and wherein the first portion, the second portion and the middle portion are single walled.

2. The pipe of claim 1, wherein the first corrosion-resistant material is the same as the second corrosion-resistant material.

3. The pipe of claim 1, wherein the first corrosion-resistant material is different from the second corrosion-resistant material.

4. The pipe of any one of the preceding claims, wherein the material of the middle portion and the first and second corrosion-resistant materials are metals and/or metal alloys.

5. The pipe of claim 4, wherein the material of the middle portion comprises mild steel.

6. The pipe of claim 4, wherein the first and second corrosion-resistant materials comprise stainless steel, zinc, titanium or a titanium alloy.

7. The pipe of any one of the preceding claims, further comprising a corrosion-resistant coating on an inner surface of the middle portion.

8. The pipe of any one of the preceding claims, further comprising a corrosion-resistant coating on an outer surface of the middle portion.

9. The pipe of claims 7 or 8, wherein the corrosion-resistant coating covers at least a portion of an inner and/or outer surface of the first end portion and/or at least a portion of an inner and/or outer surface of the second end portion.

10. The pipe of any one of claims 7 to 9, wherein the corrosion-resistant coating comprises cement, stainless steel, zinc, titanium or a titanium alloy.

11. The pipe of any one of the preceding claims, wherein the first end portion, second end portion and middle portion are arranged coaxially in series.

12. A method of joining pipes, comprising:
    a. providing two or more pipes according to any one of claims 1 to 11; and
    b. welding the pipes to form a corrosion-resistant joint between one end portion and another end portion.

13. The method of claim 12, wherein the step of welding the pipes makes use of heat.

14. The method of claim 13, wherein the step of welding the pipes comprises friction welding or arc welding.

15. The method of any one of claims 12 to 14, further comprising the step of coating a corrosion-resistant coating on an inner surface of the middle portion.

16. The method of any one of claims 12 to 15, further comprising the step of coating a corrosion-resistant coating on an outer surface of the middle portion.

17. The method of claim 15 or 16, further comprising the step of coating the corrosion-resistant coating on at least a portion of an inner and/or outer surface of the first end portion and/or at least a portion an inner and/or outer surface of the second end portion.

18. The method of any one of claims 15 to 17, wherein the corrosion-resistant coating comprises cement, stainless steel, zinc, titanium or a titanium alloy.

19. The method of any one of claims 12 to 18, further comprising the step of placing an intermediate corrosion-resistant portion between one pipe and another pipe.