Claims:

1. A brake shoe abrasion detection unit of a railway vehicle, the brake shoe abrasion detection unit being attached to a brake shoe of a railway vehicle tread brake and detecting abrasion of the brake shoe, the brake shoe abrasion detection unit comprising:

at least one abrasion detection RF tag that is attached at a position of an abrasion limit of the brake shoe or a position closer to a braking surface than the abrasion limit; and

a reference RF tag that is attached at a position beyond the abrasion limit of the brake shoe.

2. The brake shoe abrasion detection unit of a railway vehicle according to claim 1, wherein the brake shoe abrasion detection unit is attached to a side surface of the brake shoe,

the brake shoe abrasion detection unit further comprising a base sheet on which the at least one abrasion detection RF tag and the reference RF tag are provided at different positions in a thickness direction of the brake shoe.

3. The brake shoe abrasion detection unit of a railway vehicle according to claim 2, wherein

the abrasion detection RF tag and the reference RF tag are provided on a top surface of the base sheet, and

an adhesive layer to be applied to the brake shoe is formed on a back surface of the base sheet.

4. The brake shoe abrasion detection unit of a railway vehicle according to claim 3, wherein the base sheet is a heat resistant sheet.

5. The brake shoe abrasion detection unit of a railway vehicle according to any one of claims 3 and 4, wherein the base sheet includes a breakable portion formed between the abrasion detection RF tag and the reference RF tag.

6. The brake shoe abrasion detection unit of a railway vehicle according to claim 2, wherein

adhesive layers to be applied to the brake shoe are formed on back surfaces of the abrasion detection RF tag and the reference RF tag, and

pressure-sensitive adhesive layers to be detachably applied to top surfaces of the abrasion detection RF tag and the reference RF tag are formed on a back surface of the base sheet.

7. The brake shoe abrasion detection unit of a railway vehicle according to any one of claims 2 to 6, wherein scale marks aligned in a thickness direction of the brake shoe are applied to the base sheet.

8. The brake shoe abrasion detection unit of a railway vehicle according to any one

of claims 1 to 7, wherein the at least one abrasion detection RF tag includes a first abrasion detection RF tag that is attached at a position closer to the braking surface than the abrasion limit of the brake shoe, and a second abrasion detection RF tag that is attached at the position of the abrasion limit of the brake shoe.

9. The brake shoe abrasion detection unit of a railway vehicle according to any one of claims 1 to 8, wherein

an identification number of the reference RF tag is a number determined according to a first rule, and

an identification number of the abrasion detection RF tag is a number determined according to a second rule different from the first rule.

10. The brake shoe abrasion detection unit of a railway vehicle according to any one of claims 1 to 9, wherein each of normal lines of communication surfaces of the abrasion detection RF tag and the reference RF tag includes a vertical direction downward component in a state where the abrasion detection RF tag and the reference RF tag are attached to the brake shoe.

11. A brake shoe abrasion detection unit set of a railway vehicle, the brake shoe abrasion detection unit set comprising a plurality of the brake shoe abrasion detection units according to any one of claims 1 to 10, wherein

the plurality of the brake shoe abrasion detection units includes a first brake shoe abrasion detection unit and a second brake shoe abrasion detection unit,

the first brake shoe abrasion detection unit is attached at a position on a first side in a circumferential direction of the brake shoe, and

the second brake shoe abrasion detection unit is attached at a position on a second side in the circumferential direction of the brake shoe.

12. A brake shoe abrasion detection unit set of a railway vehicle, the brake shoe abrasion detection unit set comprising a plurality of the brake shoe abrasion detection units according to any one of claims 1 to 10, wherein

the plurality of the brake shoe abrasion detection units includes a first brake shoe abrasion detection unit and a second brake shoe abrasion detection unit,

the first brake shoe abrasion detection unit is attached to a surface on a first side in a vehicle width direction of the brake shoe, and

the second brake shoe abrasion detection unit is attached to a surface on a second side in the vehicle width direction of the brake shoe.