CLAIMS

[Claim 1]

A cutting method for cutting a workpiece using a cutting apparatus, wherein the cutting apparatus includes

at least one pair of cutting parts including a first annular cutting part and a second annular cutting part,

a first cutting edge provided on an outer edge of the first annular cutting part and a second cutting edge provided on an outer edge of the second annular cutting part each have a V-shaped radial-direction profile,

a front end angle θ_1 of the first cutting edge and a front end angle θ_2 of the second cutting edge being 10° or more and 120° or less,

a front end radius R_1 of the first cutting edge and a front end radius R_2 of the second cutting edge being 0.5% or more and 35.0% or less of a sheet thickness, and

the workpiece is cut by causing the workpiece to pass between the first cutting edge and the second cutting edge facing each other and pushing the cutting edges into the workpiece, wherein

a trimming width of the workpiece is a distance between one of end portions of the workpiece and a cutting position of the workpiece, and

when a front end radius of the first annular cutting part is defined as R_1, a front end radius of the second annular cutting part is defined as R_2, and a sheet thickness of the workpiece is defined as t, a trimming width D of the workpiece satisfies expression (2) below.

$$R \leq D \leq 3t \quad ...(2)$$

$$R = \mathrm{Min}(R_1, R_2)$$

[Claim 2]

A cutting method for cutting a workpiece using a cutting apparatus, wherein the cutting apparatus includes

at least one pair of cutting parts including a first annular cutting part and a second annular cutting part,

a first cutting edge provided on an outer edge of the first annular cutting part and a second cutting edge provided on an outer edge of the second annular cutting part each have a V-shaped radial-direction profile,

a front end angle θ_1 of the first cutting edge and a front end angle θ_2 of the second cutting edge being 10° or more and 120° or less,

a front end radius R_1 of the first cutting edge and a front end radius R_2 of the second cutting edge being 0.5% or more and 35.0% or less of a sheet thickness, and

the workpiece is cut by causing the workpiece to pass between the first cutting edge and the second cutting edge facing each other and pushing the cutting edges into the workpiece, wherein

an amount of offset L_D between annular cutting parts in a strip running direction is 1 mm or more, and

the workpiece is cut at only one place in a single cutting process.

[Claim 3]

The cutting method according to claim 1 or 2, wherein the workpiece is a multi-layer material formed by coating a surface of a base material with a coating material.

[Claim 4]

The cutting method according to any one of claims 1 to 3, wherein cutting of the workpiece is carried out by performing a plurality of cutting processes.

[Claim 5]

The cutting method according to claim 4, wherein in cutting of the workpiece by performing the plurality of cutting processes, the front end angle θ_1 of the first cutting edge and the front end angle θ_2 of the second cutting edge are made smaller gradually through the cutting processes.

[Claim 6]

The cutting method according to claim 4 or 5, wherein in a case where the workpiece is cut by performing two cutting processes, when a front end radius of the first cutting edge is defined as R_1, a front end radius of the second cutting edge is defined as R_2, and a sheet thickness of the workpiece is defined as t, a space S between

the first cutting edge and the second cutting edge in a first cutting process satisfies expression (1) below.

$$(R_1 + R_2) \leq S \leq \{t - (R_1 + R_2)\} \quad ...(1)$$

[Claim 7]

The cutting method according to any one of claims 1 to 6, wherein in a case where the number of the at least one pair of cutting parts provided in the cutting apparatus is more than one, a distance W between the cutting parts adjacent to each other in a sheet width direction is 200 mm or more.

[Claim 8]

The cutting method according to any one of claims 1 to 7, wherein a diameter of each of the first annular cutting part and the second annular cutting part is 50 mm or more.