WHAT IS CLAIMED IS:

1. A protective film detecting method for detecting whether or not a workpiece formed with a bump or a pattern on a surface thereof is coated with a water-soluble protective film, the method comprising:

a reflection intensity acquiring step of irradiating with infrared light having a predetermined wavelength range a reference that has a first region preliminarily coated with the water-soluble protective film and a second region not coated with the water-soluble protective film, receiving reflected light, and acquiring an averaged intensity of reflection from the first region and an averaged intensity of reflection from the second region;

a threshold determining step of determining a threshold value to be used as a reference for determining whether or not a surface of concern is coated with the water-soluble protective film, from the intensity of reflection from the first region and the intensity of reflection from the second region at a wavenumber of 3000 cm^{-1} to 3600 cm^{-1}; and

a detection step of sequentially irradiating a surface of the workpiece coated with the water-soluble protective film with the infrared light at a predetermined angle θ, receiving reflected light to acquire an intensity of reflection, comparing the thus acquired reflection intensity with the threshold value, and thereby detecting whether or not the surface of concern is coated with the water-soluble protective film,

wherein the reference including the first region and the second region is different from the workpiece coated with the water-soluble protective film.

2. The method according to claim 1, wherein the predetermined angle θ is an angle formed between incident light and the reflected light, and is selected from the range of $0°<\theta\leq60°$.

3. The method according to claim 1, wherein said reflective intensity acquiring step includes said irradiating with infrared light and said receiving of reflected light from a plurality of points in said first region and said irradiating with infrared light and said receiving of reflected light from a plurality of points in said second region.

4. The method according to claim 1, wherein said reflective intensity acquiring step is performed upon said reference that comprises a single reference workpiece that is divided into said first region and said second region.

5. The method according to claim 1, wherein said reflective intensity acquiring step is performed upon said reference that comprises two reference workpieces, wherein a first of said two reference workpieces consists only of said first region and a second of said two reference workpieces consists only of said second region.

6. The method according to claim 1, wherein the water-soluble protective film is composed of a water-soluble resin including polyvinyl alcohol as a base material.

7. The method according to claim 1, wherein the water-soluble protective film is composed of a water-soluble resin including polyvinyl pyrrolidone as a base material.