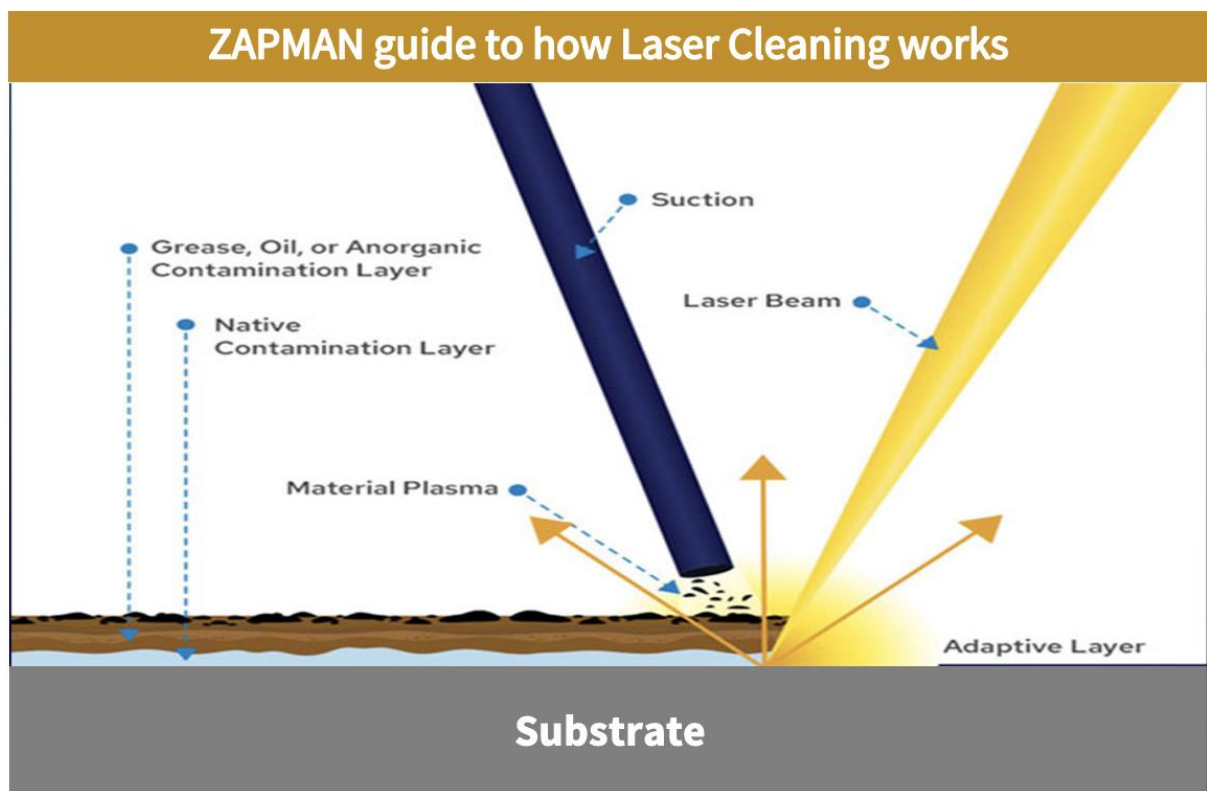


ZAPMAN

LASER CLEANING



The image above explains the principle of laser cleaning, illustrating how this technology works to remove contaminants from the surface of a material ("substrate").

Step-by-step description:

Initial Contamination Layer: (shown in Brown)

- o The substrate has different layers of accumulated contamination, which may include grease, oil, inorganic particles, or environmental deposits.

- o These layers are represented as the "Grease, Oil, or Inorganic Contamination Layer" and the "Native Contamination Layer."

Laser Beam: (shown in Yellow)

- o The laser emits a beam directed toward the contaminated surface. The laser energy interacts with the impurities in the upper layers.

Plasma Generation: (shown in Yellow)

- o When the laser pulse impacts the layers of contamination, it generates a plasma-like effect. This occurs because the contaminants absorb the laser energy and are vaporized or removed without damaging the underlying substrate.

Contaminant Removal: (shown as Blue suction tube)

- o Contaminants are expelled in the form of particles or gases by the action of the laser. These particles can be detached and subsequently treated or vacuumed away ("suction").

Substrate Protection: (shown in Grey)

- o The "Adaptive Layer" shows that the laser only interacts with the contaminants and does not affect the base surface or substrate. This ensures that the material is not damaged during the process.

Reflection Mechanisms: (shown in Bronze arrows)

- o Part of the laser energy can be reflected (Bronze arrows), which is controlled to avoid damage and optimize cleaning.

In summary

laser cleaning is a high-precision, efficient method for removing layers of contamination without wearing down or damaging the base material. It is especially useful in industrial and high-tech applications.

For further information on how LASER Cleaning can help you with your projects please call\WhatsApp: **+34 711 022 452** Email: [**info@zapman.es**](mailto:info@zapman.es)

or visit our webpage: [**zapman.es**](http://zapman.es)

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