

## FOTO

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Versión 17 de Junio de 2013*

### ANEXO

#### NORMAS DE REFERENCIA

#### 1. REAL DECRETO 1553/2005, DE 23 DE DICIEMBRE, POR EL QUE SE REGULA LA EXPEDICIÓN DEL DOCUMENTO NACIONAL DE IDENTIDAD Y SUS CERTIFICADOS DE FIRMA ELECTRÓNICA

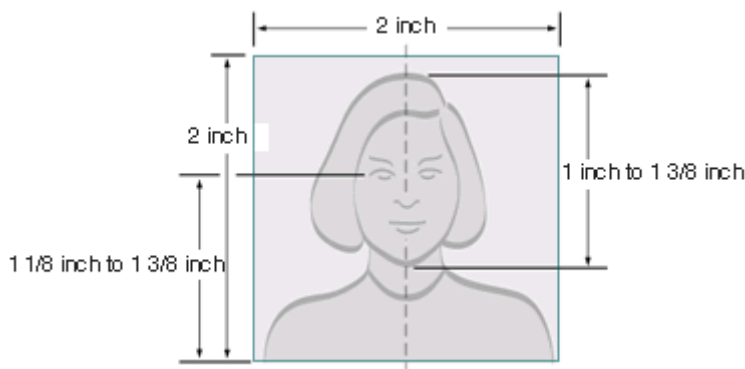
##### Artículo 5. Requisitos para la expedición.

1. b) Una fotografía reciente en color del rostro del solicitante, tamaño 32 por 26 milímetros, con fondo uniforme claro liso, tomada de frente con la cabeza totalmente descubierta y sin gafas de cristales oscuros o cualquier otra prenda que pueda impedir o dificultar la identificación de la persona.

#### 2. PASSPORT PHOTO DE LA UE cumple con las especificaciones:

- Incluya una cara completa, de frente y con ojos abiertos.
- Asegúrese que la foto presente una cabeza completa desde arriba del pelo hasta los hombros.
- Tome la foto con un fondo blanco o con un fondo casi-blanco.
- Evite sombras sobre la cara o en el fondo
- La cara en la foto debe tener una expresión normal (boca cerrada)
- Las fotos no deben incluir gafas de sol o sombreros
- El contraste y la luz en la foto debe ser normales

#### 3. PASSPORT PHOTO REQUIREMENTS U.S. Department of State



La equivalencia de pulgadas (inch) a milímetros ajustado al tamaño de la foto requerida, tipo dni, tendría los valores:

Tamaño igual a 32 x 26 mm (alto x ancho)

La altura de los ojos desde la base puede variar desde 18,2mm a 20,2 mm

El área comprendida entre la barbilla y el pelo debe ser entre 15,7 mm y 20,2 mm (50 a 60% del alto de la foto)

- In color
- Printed on photo quality paper

- 2 x 2 inches (51 x 51 mm) in size
- Sized such that the head is between 1 inch and 1 3/8 inches (between 25 and 35 mm) from the bottom of the chin to the top of the head. View the [Photo Composition Template](#) for more size requirement details.
- (1) Taken within the last 6 months to reflect your current appearance (tomada en los 6 últimos meses)
- Taken in front of a plain white or off-white background
- Taken in full-face view directly facing the camera
- With a neutral facial expression and both eyes open
- Taken in clothing that you normally wear on a daily basis:
  - Uniforms should not be worn in your photo, except religious clothing that is worn daily.
  - Do not wear a hat or head covering that obscures the hair or hairline, unless worn daily for a religious purpose. Your full face must be visible, and the head covering must not cast any shadows on your face.
  - Headphones, wireless hands-free devices or similar items are not acceptable in your photo.
  - If you normally wear prescription glasses, a hearing device or similar articles, they may be worn for your photo.
  - Dark glasses or non-prescription glasses with tinted lenses are not acceptable unless you need them for medical reasons (a medical certificate may be required)
  - Glare on glasses is not acceptable in your photo. Glare can be avoided with a slight downward tilt of the glasses or by removing the glasses or by turning off the camera flash.

#### 4. BIOMETRICS DEPLOYMENT OF MACHINE READABLE TRAVEL DOCUMENTS ICAO TAG MRTD/NTWG

**Face** – Facial recognition vendors all use proprietary algorithms to generate their biometric templates. These algorithms are kept secret by the vendors as their intellectual property and cannot be reverse-engineered to create a recognizable facial image. Therefore facial recognition templates are not interoperable between vendors – the only way to achieve interoperability with facial images is for the “original” captured photograph to be passed to the Receiving State. The Receiving State then uses its own vendor algorithm (which may or may not be the same vendor/version as the Issuing State used) to compare a facial image of captured in real time of the MRTD holder, with the facial image read from the data storage technology in their MRTD.

For facial images, an ICAO-standard size photograph colour-scanned at 300dpi results in an image with approximately 90 pixels between the eyes and a size of approximately 643 K (kilobytes). This can be reduced to 112K (kilobytes) with very minimal compression.

The studies at Annex B and Annex C were undertaken using the same Australian Passport standard photograph images but using different vendor algorithms. The result obtained, using JPEG and JPEG2000 compression, shows the minimum optimal image size for an ICAO standard passport photo image is approximately 12K (kilobytes) of data. The studies show higher compression beyond this size results in significantly less reliable facial recognition results.

12K in fact is the bare minimum and cannot always be achieved as some images compress higher than others at the same compression ratio - depending on factors such as clothes colouring and hair style. **In practice ePassport facial image average compressed sizes in the 15K-20K range should be the optimum aimed for.**

The degree to which the base image should be cropped is also a question. Whilst images can be cropped to save storage and show just the eye/nose/mouth features, the ability for a human to easily verify that image is of the same person in front of them, or appearing as the photograph in the data page of the passport, is diminished significantly.



For example, the image to the left provides a greater challenge in recognizing the person than the image to the right.



**Recommendation:**

Images stored in the LDS are to be either

- Not cropped ie identical to the image printed on the Data Page
- Be cropped from chin to crown, and edge-to-edge as a minimum as shown to the right

