Table 3-3: PDF Object Requirements

PDF Object/Filter	Producer	Consumer	Reference
'DeviceGray' Color Space	PROH	OPT	[pdf] pg. 182, See "ICCBased Color Space" section of this specification.
'DeviceRGB' Color Space	PROH	OPT	[pdf] pg. 184, See "ICCBased Color Space" section of this specification.
'Lab' Color Space	PROH	PROH	[pdf] pg. 187
'ICCBased' Color Space	REQ	REC	[pdf] pg. 189
'Indexed' Color Space	PROH	PROH	[pdf] pg. 199

3.3.13 ICCBased Color Space

See [pdf] Table 4.16.

Table 3-20: ICCBased Color Space

Field	Specification
'N'	MUST have a value of either '1' or '3'.
'Alternate'	PROHIBITED, Implies '/DeviceGray' if 'N' is '1' or '/DeviceRGB' if 'N' is '3'.
'Range'	AS SPECIFIED.
'Metadata'	AS SPECIFIED.

The following rules MUST be adhered to:

- All ICC profiles MUST adhere to ICC specification ICC.1:1998-09 [icc] and it's addendum ICC.1A:1999-04 [icc-a].
- The **Device Class** MUST have the Signature of 'scrn'. See [icc] Section 6.1.4, Table 11.
- The **Color Space** MUST have a Signature of either 'RGB ', or 'GRAY'. See [icc] Section 6.1.5, Table 13.
- The **Profile Connection Color Space** MUST have a Signature of 'XYZData'. See [icc] Section 6.1.6, Table 14. Rationale: The **XYZData** Profile Connection Space does not require an **AToB0Tag** which would increase the size and complexity of the profile, dramatically.
- The **Flags** at Bit Positions 0 and 1 MUST both be set to TRUE. See [icc] Section 6.1.8, Table 16.
- **Rendering Intent** MUST be IGNORED by the Consumer in favor of the 'Intent' field in the Image XObject. See [pdf] pg. 192 and [icc] Section 6.1.11, Table 18.
- **N-Component LUT-Based Input Profiles** are PROHIBITED. See [icc] Section 6.3.1.3.
- **FlateDecode** Filter compression MUST NOT be used on the profile data. Rationale: since the profile data must be cached on the target system in uncompressed form, so that it may be accessed during image processing; compression of this data will only affect data transmission. In addition, compression of this data may lead to an incorrect calculation of the cache memory required on the Consuming device.

Consuming devices that do not wish to support ICC color profiles MAY use the 'Alternate' color space as specified in [pdf] Table 4.16. It is strongly recommended that only devices with limited, or no color capability, or limited resolution (hand-held devices and the like) should consider not supporting ICC color profiles. Consuming devices that choose not to support ICC color profiles MUST support '/DeviceGray' and '/DeviceRGB' color spaces (See [pdf] pg. 179) instead and MUST interpret image color values using ICCBased color space's 'Alternate' color space definition.

[icc]
International Color Consortium (ICC), ICC.1:1998-09, “File Format for Color Profiles”, 1998. http://www.color.org/ICC-1_1998-09.PDF

[icc-a]
International Color Consortium (ICC), ICC.1A:1999-04, “Addendum 2 to Spec. ICC.1:1998-09”, 1999. http://www.color.org/ICC-1A_1999-04.PDF