

Title (en)  
COLD-ROLLED STEEL SHEET WITH EXCELLENT FORMABILITY, SHAPE RETENTIVITY, AND SURFACE APPEARANCE AND PROCESS FOR PRODUCING SAME

Title (de)  
KALTGEWALZTES STAHLBLECH VON HERVORRAGENDER FORMBARKEIT, FORMSPEICHERUNG UND OBERFLÄCHENERSCHEINUNG SOWIE VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)  
TÔLE D'ACIER LAMINÉE À FROID AYANT UNE EXCELLENTE FORMABILITÉ, UNE EXCELLENTE CAPACITÉ DE CONSERVATION DE FORME ET UNE EXCELLENTE APPARENCE DE SURFACE ET PROCÉDÉ DE FABRICATION DE CETTE TÔLE

Publication  
**EP 2431490 B1 20140115 (EN)**

Application  
**EP 10769548 A 20100219**

Priority  
• JP 2010053017 W 20100219  
• JP 2009108820 A 20090428

Abstract (en)  
[origin: EP2431490A1] In low-carbon steel, a cold-rolled steel sheet and a method for manufacturing the same are provided. The cold-rolled steel sheet can satisfy both workability and shape fixability; can be subjected to drawing, bending, and stretching; can ensure shapes required for large-size parts; have high flatness; is free from appearance defects; and is excellent in formability, shape fixability, and surface appearance. The cold-rolled steel sheet has a composition of 0.030% to 0.060% C, 0.05% or less Si, 0.1% to 0.3% Mn, 0.05% or less P, 0.02% or less S, 0.02% to 0.10% Al, and 0.005% or less N on a mass basis, the remainder being iron and unavoidable impurities. The Lankford value thereof is 0.7 to 1.4 in a rolling direction and a direction perpendicular to the rolling direction. The in-plane anisotropy ( $r$ ) of the Lankford value thereof satisfies the inequality  $-0.2 \leq r \leq 0.2$ . The mean yield strength thereof is 230 MPa or less and the mean elongation thereof is 40% or more in three directions: the rolling direction, a direction at 45 degrees to the rolling direction, and a direction perpendicular to the rolling direction. The yield elongation of the cold-rolled steel sheet held at 170 °C for 60 minutes is 2% or less in each of the three directions.

IPC 8 full level  
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