Bibliography

[1] ASTM E1820, *Standard test method for measurement of fracture toughness — American Society for Testing and Materials*

[2] ISO 12135:2016, *Metallic materials — Unified method of test for the determination of quasistatic fracture — International Organization for Standardization*

[3] ASTM E2472, *Standard test method for determination of resistance to stable crack extension under low-constraint conditions — American Society for Testing and Materials*

[4] ISO 22889, Metallic materials — Method of test for the determination of resistance to stable crack extension using specimens of low constraint — *International Organization for Standardization*

[5] Cotterell B., Reddell J.K. The Essential Work of Plane Stress Ductile Fracture. Int. J. Fract. 1977, ••• pp. 267–277

[6] Kaufman J.G., Knoll A.H. Kahn-Type Tear Tests and Crack Toughness of Aluminum Sheet. Metals Research and Standards, 1964, pp. 151–5.

[7] S. Zhang, S. Zhou, M. Li, B. Fu. Calculation and comparison on fracture toughness of specific reliability between ASTM and ISO standards

[8] Xia L., Shih C.F., Hutchinson J.W. A computational approach to ductile crack growth under large scale yielding conditions. J. Mech. Phys. Solids. 1995, 43 pp. 389–413

[9] Zhu X.K., Jang S.K. J-R curves corrected by load-independent constraint parameter in ductile crack growth. Eng. Fract. Mech. 2001, 68 pp. 285–301

[10] Frómeta D., Parareda S., Lara A., Molas S., Casellas D., Jonsén P. et al. Identification of fracture toughness parameters to understand the fracture resistance of advanced high strength sheet steels. Eng. Fract. Mech. 2020, 229 p. 106949

[11] J.L. Arana, J.J. González. Mecánica de fractura. Servicio editorial Universidad del País Vasco

[12] Zhu X.K., Leis B.N. Revisit of ASTM round robin test data for determining R curves of thin sheet materials. J. ASTM Int. 2009, [paper ID JAI102510]

[13] Lacroix G., Pardoen T., Jacques P.J. The fracture toughness of TRIP-assisted multiphase steels. Acta Mater. 2008, 56 pp. 3900–3913

[14] Faccoli M., Cornacchia G., Gelfi M., Panvini A., Roberti R. Notch ductility of steels for automotive components. Eng. Fract. Mech. 2014, 127 pp. 181–193

[15] Marchal Y, Schmidt K, Pardoen T, Knockaert R, Doghri I and Delannay F 1996 Comparison methods for the measurement of fracture toughness of thin sheets: (ECF 11) Mechanisms and Mechanics of Damage and Failure 2259-2265

[16] T. Pardoen, Y. Marchal, F. Delannay. Thickness dependence of cracking resistance in thin aluminium plates. *J. of Mech. Sol.* 47 (1999) 2093-2123

[17] J.C. Newman Jr., M.A. James, U. Zerbst. A review of the CTOA/CTOD fracture criterion. *Eng. Frac. Mech.* 70 (2003) 371-385

[18] J. Heerens, M.Schödel. On the determination of crack tip opening angle, CTOA, using light microscopy and δ_5 measurement technique. *Eng. Frac. Mech.* 70 (2003) 417-426

[19] Koley S., Chatterjee S., Shome M. Evaluation of fracture toughness of thin sheet of interstitial free high strength steel through critical crack tip opening angle (CTOAc) measurement. Int. J. Fract. 2015, 194 pp. 187–195

[20] Xu S., Petri N., Tyson W.R. Evaluation of CTOA from load vs. load-line displacement for C(T) specimen. Eng. Fract. Mech. 2009, 76 (13) pp. 2126–2134

[21] Ben Amara M., Pluvinage G., Capelle J., Azari Z. Crack Tip Opening Angle as a Fracture Resistance Parameter to Describe Ductile Crack Extension and Arrest in Steel Pipes under Service Pressure. Phys. Mesomech. 2015, 18 pp. 355–369

[22] ASTM B871, *Standard Test Method for Tear Testing of Aluminum Alloy Products. American Society for Testing and Materials*

[23] Garret G., Knott J.F. The influence of compositional and microstructural variations on the mechanism of static fracture in aluminum alloys. Metal. Trans. A. 1978, 9 pp. 1187–1201

[24] Dumont D., Deschamps A., Brechet Y. On the relationship between microstructure, strength and toughness in AA7050 aluminum alloy. Mater. Sci. Eng. A. 2003, 356 pp. 326–336

[25] Henn P., Liewald M., Sindel M. Investigation on crashworthiness characterisation of 6xxx series aluminium sheet alloys based on local ductility criteria and edge compression tests. IOP Conf. Ser.: Mater. Sci. Eng. (2018) 418 012125

[26] Ying L., Lu J., Chang Y., Tang X., Hu P., Zhao K. Optimization evaluation test of strength and toughness parameters for hot-stamped high strength steels. J. Iron Steel Res. Int. 2013, 20 pp. 51–56

[27] Lorthios J., Gourgues A.F., Cugy P., Scott C. Damage of TWIP steels for automotive application. ICF12 Int. Conference on Fracture, Ottawa (2009)

[28] Frómeta D., Lara A., Casas B., Casellas D. Fracture toughness measurements to understand local ductility of advanced high strength steels. IOP Conf. Ser.: Mater. Sci. Eng. (2019) 651 012071

[29] Wu J., Mai Y.W. The essential fracture work concept for toughness measurement of ductile polymers. Polym. Eng. Sci. 1996, 36 pp. 2275–2288

[30] Y.W. Mai, B. Cotterell. On the essential work of ductile fracture in polymers. *Int. J. Fract.* 32 (1986) 105-25

[31] Mai Y.W., Powell P. Essential work of fracture and J-integral measurements for ductile polymers. J. Polym. Sci. 1991, 29 pp. 785–793

[32]. Hashemi. Fracture toughness evaluation of ductile polymeric films. J. Mater. Sci. 1997, 32 pp. 1563–1573

[33] Chan W.Y.F., Williams J.G. Determination of the fracture toughness of polymeric films by the essential work method. Polymer (Guildf.). 1994, 35 (8) pp. 1666–1672

[34] León N., Martínez A.B., Castejón P., Arencón D., Martínez P.P. The fracture testing of ductile polymer films: Effect of the specimen notching. Polym. Test. 2017, 63 pp. 180–193

[35] A.B. Martínez, N. León, A. Segovia, J. Cailloux, P.P. Martínez. Effect of specimen notch quality on the essential work of fracture of ductile polymer films. *Engineering Fracture Mechanics* 180 (2017) 296-314

[36] Y.W. Mai, K.M. Pilko. The essential work of plane stress ductile fracture of a strain-aged steel. *J. Mater. Sci.* 14 (1979) 386-394

[37] Marchal Y., Delannay F. Comparison of methods for fracture toughness testing of thin low carbon steel plates. Mater. Sci. Technol. 1998, 14 pp. 1163–1168

[38] Cotterell B., Pardoen T., Atkins A.G. Measuring toughness and the cohesive stress–displacement relationship by the essential work of fracture concept. Eng. Fract. Mech. 2005, 72 pp. 827–848

[39] Marchal Y., Walhin J.F., Delannay F. Statistical procedure for improving the precision of the measurement of the essential work of fracture of thin sheets. Int. J. Fract. 1997, 87 pp. 189–199

[40] Pardoen T., Hachez F., Marchioni B., Blyth P.H., Atkins A.G. Mode I fracture of sheet metal. J. Mech. Phys. Solids. 2004, 52 pp. 423–452

[41] Tuba F., Oláh L., Nagy P. The role of ultimate elongation in the determination of valid ligament range of essential work of fracture tests. J. Mater. Sci. 2012, 47 pp. 2228–2233

[42] Y.W. Mai, B. Cotterell. Effects of pre-strain on plane-stress ductile fracture in α -brass, *J.Mater.Sci.*13 (1980) 2296-2306

[43] Muñoz R., Lara A., Casellas D. Fracture toughness characterization of advanced high strength steels. Int. Deep Drawing Research Group (IDDRG) Conference 2011 (Bilbao, Spain, June 5-8, 2011)

[44] Gutiérrez D., Pérez Ll., Lara A., Casellas D., Prado J.M. Toughness evaluation of high strength steels sheets by means of the essential work of fracture. 19th European conference on fracture: fracture mechanics for durability, reliability and safety, ECF 2012

[45] Casellas D., Lara A., Frómeta D., Gutiérrez D., Molas S., Pérez Ll. et al. Fracture Toughness to Understand Stretch-Flangeability and Edge Cracking Resistance in AHSS. Metall. Mater. Trans., A Phys. Metall. Mater. Sci. 2017, 48 pp. 86–94

[46] Sahoo S., Padmapriya N., De P.S., Chakraborti P.C., Ray S.K. Ductile tearing resistance indexing of automotive grade DP590 steel sheets: EWF testing using DENT specimens. J. Mater. Eng. Perform. 2018, 27 pp. 2018–2023

[47] Sarkara R., Chandra S.K., De P.S., Chakraborti P.C., Ray S.K. Evaluation of ductile tearing resistance of dual-phase DP 780 grade automotive steel sheet from essential work of fracture (EWF) tests. Theor. Appl. Fract. Mech. 2019, 103 p. 102278

[48] S.K. M R. E. Schmidova, P. Konopík, D, Melzer, F. Bozkurt, NV Londe. Fracture Toughness Analysis of Automotive-Grade Dual-Phase Steel Using Essential Work of Fracture (EWF) Method. Metals (Basel). 2020, 10 p. 1019

[49] Ismail K., Perlade A., Jacques P.J., Pardoen T. Outstanding cracking resistance of fibrous dual phase steels. Acta Mater. 2021, 207 p. 116700

[50] Frómeta D., Cuadrado N., Rehrl J., Suppan C., Dieudonné T., Dietsch P. et al. Microstructural effects on fracture toughness of ultra-high strength dual phase sheet steels. Mater. Sci. Eng. A. 2021, 802 p. 140631

[51] Luo Z.C., Liu R.D., Wang X., Huang M.X. The effect of deformation twins on the quasi-cleavage crack propagation in twinning-induced plasticity steels. Acta Mater. 2018, 150 pp. 59–68

[52] Wu R., Li J., Li W., Wu X.C., Jin X., Zhou S. et al. Effect of metastable austenite on fracture resistance of quenched and partitioned (Q&P) sheet steels. Mater. Sci. Eng. A. 2016, 657 pp. 57–63

[53] Golling S., Frómeta D., Casellas D., Jonsén P. Influence of microstructure on the fracture toughness of hot stamped boron steel. Mater. Sci. Eng. A. 2019, 743 pp. 529–539

[54] Broberg K.B. Crack-growth criteria and non-linear fracture mechanics. J. Mech. Phys. Solids. 1971, 19 pp. 407–418

[55] Broberg K.B. On stable crack growth. J. Mech. Phys. Solids. 1975, 23 pp. 215–237

[56] Frómeta D., Lara A., Grifé L., Dieudonné T., Dietsch P., Rehrl J. et al. Fracture resistance of advanced high strength steel sheets for automotive applications. Metall. Mater. Trans., A Phys. Metall. Mater. Sci. 2021, 52 pp. 840–856

[57] Xiong Z., Jacques P.J., Perlade A., Pardoen T. On the sensitivity of fracture mechanism to stress concentration configuration in a two-step quenching and partitioning steel. Int. J. Fract. 2020, 224 pp. 101–116

[58] Hilhorst A., Pardoen T., Jacques P.J. Optimization of the essential work of fracture method for characterization of the fracture resistance of metallic sheets. Eng. Fract. Mech. 2022, 268 p. 108442

[59] Pardoen T. A method for determining the CTOD at cracking initiation – Application to the characterization of the fracture toughness of copper. 13th European Conference on Fracture 2000.

[60] Frómeta D., Lara A., Parareda S., Grifé L., Casellas D. New tool to evaluate the fracture resistance of thin high strength metal sheets. IOP Conf. Ser.: Mater. Sci. Eng. 967 (2020) 012088

[61] Frómeta D. On the measurement of fracture toughness to understand the cracking resistance of Advanced High Strength Steel sheets. PhD thesis, Universitat Politècnica de Catalunya (UPC), 2021

[62] Clutton E. Essential work of fracture. Moore DR, Pavan A, Williams JG, editors. Fracture mechanics testing methods for polymers, adhesives and composites, vol.28. ESIS Publ.; (2001) 177-95

[63] Gray A. Testing protocol for essential work of fracture. ESIS, editor. 1993, European Structural Integrity Society (ESIS) – TC4

[64] Clutton E. Testing protocol for essential work of fracture. ESIS, editor. 1997, European Structural Integrity Society (ESIS) – TC4

[65] Williams J.G., Rink M. The standardisation of the EWF test. Eng. Fract. Mech. 2007, 74 (7) pp. 1009–1017

[66] CWA 17793:2021, *Test method for determination of the EWF of thin ductile metallic sheets.* cwa17793_2021.pdf (cencenelec.eu)

[67] Hance B. Advanced High Strength Steel (AHSS) Performance Levels. SAE Technical Paper 2018-01-0629, 2018

[68] Xiong Z, Jacques PJ, Perlade A, Pardoen T. Characterization and Control of the Compromise Between Tensile Properties and Fracture Toughness in a Quenched and Partitioned Steel. Metall. and Mat. Trans. A (2019)

[69] Larour P., Freudenthaler J., Weissböck T. Reduction of cross section area at fracture in tensile test: measurement and applications for flat sheet steels. J. Phys. Conf. Ser. 2017, 896 p. 012073

[70] Hisker F., Thiessen R., Heller T. Influence of Microstructure on Damage in Advanced High Strength Steels. Mater. Sci. Forum. 2012, 706–709 pp. 925–930

[71] Frómeta D., Lara A., Molas S., Casellas D., Rehrl J., Suppan C. et al. On the correlation between fracture toughness and crash resistance of advanced high strength steels. Eng. Fract. Mech. 2019, 205 pp. 319–332

[72] Jacques P., Furnémont Q., Pardoen T., Delannay F. On the role of martensitic transformation on damage and cracking resistance in trip-assisted multiphase steels. Acta Mater. 2001, 49 pp. 139–152

[73] Krizan D., Steineder K., Kaar S., Hebesberger T. Development of third generation advanced high strength steels for automotive applications. 19th international scientific conference Transfer 2018, Trencianske Teplice (Slovakia)

[74] Frómeta D., Tedesco M., Calvo J., Lara A., Molas S., Casellas D. Assessing edge cracking resistance in AHSS automotive parts by the Essential Work of Fracture methodology. J. Phys. Conf. Ser. 2017, 896 p. 012102

[75] Frómeta D., Lara A., Parareda S., Casellas D. Evaluation of Edge Formability in High Strength Sheets Through a Fracture Mechanics Approach. AIP Conf. Proc. 2019, 2113 p. 160007

[76] Schneider M., Eggers U. 2011 Investigation on punched edge formability Proceedings of International Deep Drawing Research Group 2011 conference (Bilbao, Spain, June 5-8, 2014)

[77] Atzema E., Borsutzki M., Braun M., Brockmann S., Bülter M., Carlsson B. et al. 2012 A European round robin test for the hole expansion test according to ISO 16630 New Development in Sheet Metal Forming, Int. Conf. (Fellbach, Germany, May 23-24, 2012) pp 171-184

[78] Frómeta D, Lara A, Casas B, Casellas D. Fracture toughness measurements to understand local ductility of advanced high strength steels. *IOP Conf. Ser.: Mater. Sci. Eng.* (2019) 651 012071

[79] M.S. Walp MS. Impact Dependent Properties of Advanced and Ultra High Strength Steel. *SAE Technical Paper* 2007-01-0342, 2007

[80] Larour P., Pauli H., Kurz T., Hebseberger T. Influence of post uniform tensile and bending properties on the crash behaviour of AHSS and press-hardening steel grades. Proceedings of the IDDRG2010 (Graz, Austria) 2010

[81] Larour P., Naito J., Pichler A., Kurz T., Murakami T. Side impact crash behavior of press-hardened steels-correlation with mechanical properties. 5th Int. Conf. Hot sheet metal forming of high performance steel (CHS2) (Toronto, Canada, May 31- June 3 2015) pp 281-289

[82]Kurz T., Larour P., Lackner J., Steck T., Jesner G. Press-hardening of zinc coated steel – characterization of a new material for a new process. Proceedings of International Deep Drawing Research Group 2016 Conference (Linz, Austria, June 12-15, 2016)

[83]Link T.M., Hance B.M. Axial and Bending Crash Performance of Advanced High-Strength Steels. Int. Symp. on New Developments in Advanced High-Strength Steels. Keystone, Colorado, USA. 2017

[84]Larour P., Lackner J., Wagner L. Influence of single hat crash box flange triggering and impactor top plate welding strategy on axial crash foldability of AHSS & UHSS sheets. *IOP Conf. Ser.: Mater. Sci. Eng.* 651 012023

[85]Frómeta D., Parareda S., Lara A., Grifé L., Tarhouni I., Casellas D. A new cracking resistance index based on fracture mechanics for high strength sheet metal ranking (2021) I*OP Conf. Ser.: Mater. Sci. Eng*. 1157 012094

[86]ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

[87]ISO 9513, *Metallic materials — Calibration of extensometers used in uniaxial testing*

[88]ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*