

ONE-DIMENSIONAL CUTTING STOCK PROBLEM (1D-CSP) WITH FIRST ORDER SUSTAINABLE TRIM: A PRACTICAL APPROACH

P. L. POWAR¹, VINIT JAIN², MANISH SARAF³ & RAVI VISHWAKARMA⁴

^{1,4}Department of Mathematics & Computer Science, R. D. University, Jabalpur, Madhya Pradesh, India

²KEC International Company, Panagar, Jabalpur, Madhya Pradesh, India

³HCET, Dumna Airport Road, Jabalpur, Madhya Pradesh, India

ABSTRACT

Given a set of n order lengths $l_1, l_2, \dots, l_n$, our aim in this paper is to consider the space constraint and propose a cutting plan by cutting at most two order lengths at a time from given stock lengths. The first order sustainable trim has been defined by considering first order weighted mean of order lengths. We have defined a sustainable trim in such a way that our cutting plan will work within the limit of pre defined sustainable trim except at the end of cutting where few order lengths are left to cut.

This problem has been carried over by the authors in accordance with the practical working in the transmission tower industry. The proposed cutting plan works smoothly with minimum working space and limited men power.

KEYWORDS: First Order Sustainable Trim, 1D-CSP, Non-Negative Integral Valued (NIV) Linear Combination