The industry has been working for more than two hundred years in ways that damage the natural environment and to a varying degree, in ways that have damaged human health. In the past the environmental impact of industrial products was not a priority in the process of design and manufacturing. Now we have a variety of environmental problems derived from this. The Industrial Revolution which started in England about two hundred years ago has been proven to be much more effective and less costly than remediating these impacts afterwards (Tischler et al. 2006, 6).

Mountaineering is an activity that allows people know and enjoy the natural environment. Many mountaineering courses have a section that teaches how to practice this activity in an environmentally responsible way and, in fact, in protection in nature and the landscape (UIAA 2010). Rock and ice climbing are specific activities within mountaineering that require high performance devices. These devices need to be properly designed and used by the climber under adverse conditions. The attributes of these devices will determine the success of the project. Beyond defining the reliability, usability, and durability of these products, the design process also defines environmental performance throughout their lifecycle.

This study will investigate the design process of selected climbing tools and how this determined their quality, usability, and environmental performance. Also, the relationship between these attributes, if any, will be explored. Comparative case studies will be selected and compared to two companies with different design and manufacturing strategies.

INTRODUCTION

Since the Industrial Revolution, mechanized industry has made available all kinds of goods to satisfy the needs of the user at a reasonable price and in abundance. The proportion of the world's population. This process has changed our relationship with nature. From a realm of a man-made world (Heidegger 1965, 7), Unfortunately the industrial activity required to produce energy, materials, and products has been undertaken in ways that has harmed the natural environment for more than two hundred years. Today we have a variety of environmental problems derived from this. The Industrial Revolution which started in England about two hundred years ago has been proven to be much more effective and less costly than remediating these impacts afterwards (Tischler et al. 2006, 6).

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