

# ***Structures of air: PVC inflatable artifacts by Studio De Pas, D'Urbino, Lomazzi and Franco Mazzucchelli's installations.***

## ***Preliminary study on PVC inflatable structures degradation processes, possible treatments and collection care.***

R. Bestetti<sup>1</sup>, M. Brenna<sup>2</sup>, G. Cavanna<sup>1</sup>, M. Fratelli<sup>3</sup>, E. Pernich<sup>3</sup>, I. Sacconi<sup>1</sup>, D. Riggiardi<sup>1</sup>, A. Tibiletti<sup>1</sup>

<sup>1</sup> CESMAR7- Centro per lo Studio dei Materiali per il Restauro

<sup>2</sup> DASTU, Dipartimento di Architettura e Studi Urbani del Politecnico di Milano

<sup>3</sup> Comune di Milano, Direzione Case Museo e Progetti Speciali

This paper wants to examine PVC inflatable objects degradation processes and conservation issues through two eminent cases: the iconic *Blow* armchair (1967) and the model for the *Cupola pressostatica autoportante* (presented during the 4<sup>th</sup> Eurodomus international exhibition, Turin, BBB Bonacina stand, 1972). Both objects are part of the DDL (DePas, D'Urbino and Lomazzi with Carla Scolari) studio archive donated in 2009 to the Municipality of Milan and now into the CASVA collection (Center for Higher Studies of Visual Arts). In addition to these case studies, this article will include informations gathered through interviews with architects D'Urbino, Lomazzi and with the artist Franco Mazzucchelli whom in the same years realised his ephemeral inflatable structures named A.TO A. (acronym for *Art To Abandon*). F. Mazzucchelli's lifelong and cutting-edge research provides useful insights about the developments of plastic materials from the Sixties to the present day.

During the *Happy Blow Days* exhibition at the Politecnico di Milano to celebrate the 50<sup>th</sup> anniversary of the *Blow* arm chair a research group of conservators, chemist, architects and art historians convened (CASVA, CESMAR7 e DASTU). The aim of the group was to examine the state of conservation of four *Blow* arm chair prototypes kept in the CASVA archive. The PVC material was in decent conservative condition (reasonable yellowing, absence of plasticizer or other additive exudations) therefore it was possible to blow one model safely for the exhibition. DDL studio pioneered the research of plastic materials and production techniques so that they managed to produce an extremely thin PVC assembled with electric high frequency weldings. Through the *Blow* arm chair Marcel Breuer's utopian prediction of realising "a seat constituted by an elastic column made of air" became true.

In the CASVA archive it is also kept the model for the *Cupola Pressostatica Autoportante*; this piece represents the ultimate achievement of DDL studio in self-supporting pneumatic structures. As in the case of *Blow* arm chair, in *Cupola Pressostatica Autoportante* the PVC represents a challenge to both conservative and stabilisation aspects. This is especially true in archives repository where other plastic materials could be damaged by hydrochloric acid vapors released by the PVC hydrolysis (also known as *malignant plastic*). In this case study all objects have been treated through simple and minimal interventions: after removing dust with microfibre cloths (to avoid also microscopic scratches) the objects have been put back in the archive in airtight polyester bags (*Mylar*) to prevent absorption of potential plasticizers and other additive exudations. Considering the good conservation conditions of the objects, neither silica gel nor oxygen absorbers were added in *Mylar* bags. This measure was taken in order to avoid changes of the plasticizers condensation/evaporation balance which could potentially cause their separation. During the set-up of the *Blow* arm chair a microscopic hole was found. After preliminary tests on PVC mock-ups investigating adhesives, solvents and material compatibilities, a safe and reversible solution was found and the hole was temporally sealed using a PVC tape (*Tesa® Extra Power*, transparent).