

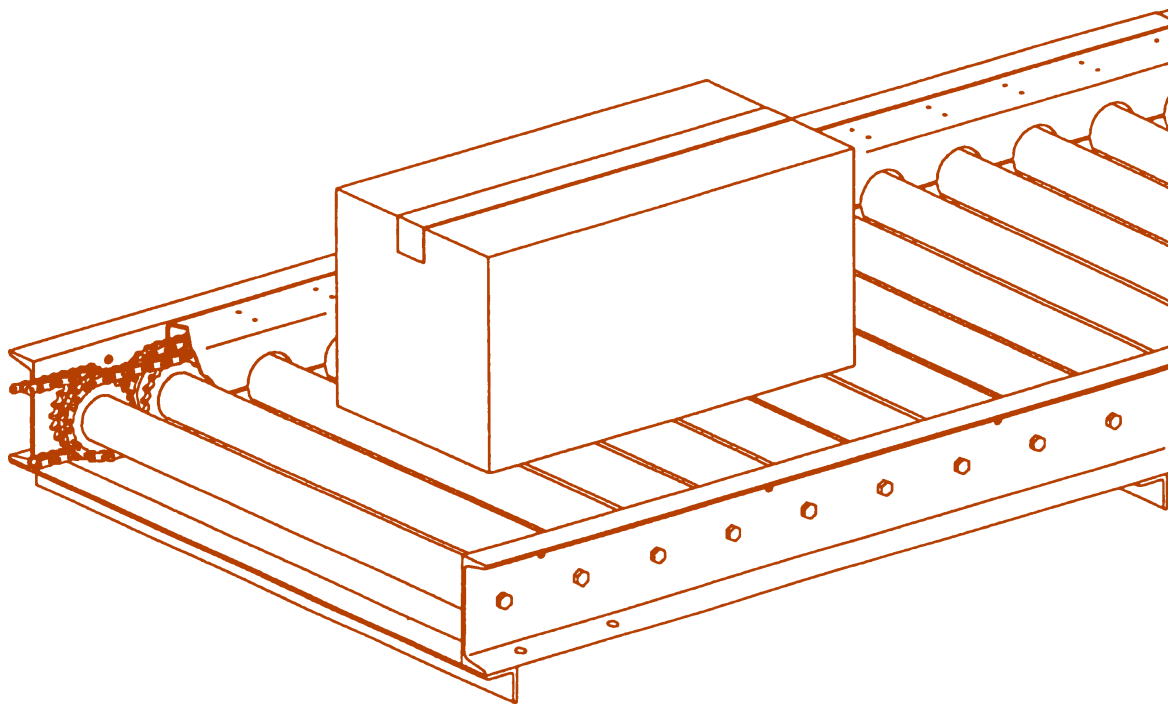
CEMA STANDARD NO. 404-2003



ANSI / CEMA 404-2003 (R2009)
Reaffirmation of ANSI / CEMA 404-2003
(Approved January 22, 2009)

CHAIN DRIVEN LIVE ROLLER CONVEYORS

PREVIEW COPY



Unit Handling Conveyors



Conveyor Equipment
Manufacturers Association

ISBN 978-1-891171-30-7

FOREWORD

Chain driven live roller conveyors are used for the controlled movement of a great variety of regular or irregular shaped commodities, from light and fragile to heavy and rugged unit loads.

The path is usually level, but it can be slightly inclined or declined, limited by the coefficient of friction between the rollers and the load. Chain driven live roller conveyors are used for transportation, as a pacesetter for assembly operation, and as a timing medium for integrated handling systems.

The purpose of this standard is to establish recommended minimum standards for use in the design and application of chain driven live roller conveyors.

For additional information relating to definitions and selection of common components, see latest edition of the following publications: CEMA Standard No. 401, Roller Conveyors-Non Powered; CEMA Standard No. 402, Belt Conveyors; CEMA Standard No. 403, Belt Driven Live Roller Conveyors; and CEMA Standard No. 102, Conveyor Terms and Definitions.

The illustrations throughout this book are schematic in nature and represent the general nature of a particular device. The illustrations are not intended to represent the recommended safety configurations since guarding has been omitted to permit clarity in showing the operational characteristics of the device. Refer to the current editions of ANSI/ASME B20.1, Safety Standard for Conveyors and Related Equipment; ANSI/ASME B15.1, Safety Standard for Mechanical Power Transmission Apparatus; and ANSI Z244.1, American National Safety Standards for Lockout/Tagout of Energy Sources - Minimum Safety Requirements; Title 29, Code of Federal Regulations (29 C.F.R.) Part 1910.147, The control of hazardous energy (lockout/tagout); Title 29, Code of Federal Regulations (29 C.F.R.) Part 1910 Subpart O, Machinery and Machine Guarding.

TABLE OF CONTENTS

	<i>Section</i>	<i>Page</i>
DEFINITIONS	1	1
Chain Driven Live Roller		
Continuous Chain Type		
Roll-to-Roll Type		
Mechanical Elements of Chain Driven Live Roller		
APPLICATION DATA	2	2
General Application Engineering Data		
Roll-to-Roll Construction		
Continuous Chain Construction		
Live Shaft Construction		
Chain Driven Live Roller Curves		
Transfers		
Accumulating Chain Driven Live Roller		
Diagrams:		
Roll-to-Roll Construction		
Continuous Chain Construction		
Transfer Selection Data		
TECHNICAL DATA	3	9
Chain Pull and Horsepower Calculations		
Table I Combined Friction Factor		
Table II Factor For Determining Value "Q"		
Table III Minimum Sprocket Teeth per Roller Diameter		
Table IV Minimum Roller Centers		

CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION

6724 Lone Oak Blvd
Naples, Florida 34109
Web Site: <http://www.cemanet.org>

Standard No. 404 - Copyright 2009
Printed in the U.S.A.

ISBN 1-891171-30-7

**Note - CEMA Has Reaffirmed the 2003 Edition.
This 2009 Edition is Identical to the 2003 Edition**

SUMMARY OF CHANGES IN 2003 EDITION

All drawings have been cleaned up and enhanced for clarity where necessary.

Foreword:

Updated to include Safety Label Requirements Notice.

Section 1: Definitions

Terms and Definitions have been expanded, regrouped for ease of understanding, and revised to conform with those in ANSI/CEMA Standard No. 102, *Conveyor Terms and Definitions*.

Section 2: Application

Figures have been redrawn and, in some cases, regrouped for clarity.

Section 3: Technical Data

No changes

**CEMA Standard No. 404-2003 (R2009)
Reviewed and Revised by
Unit Handling Section
of the
CEMA Engineering Conference**