

# Oxy-Fuel Furnaces

GREATER GLASS QUALITY, INCREASED EFFICIENCY & IMPROVED OPERATING FLEXIBILITY



GLASS PLANTS  
BATCH & CULLET SYSTEMS  
GLASS FURNACES  
EMISSION CONTROL  
WORKING END & FOREHEARTH  
PROJECT MANAGEMENT  
INSTALLATION  
REBUILDS



# TECO

ENGINEERING THAT FITS YOUR EQUATION.

# The benefits of TECO Oxy-Fuel Furnaces

*Oxy-fuel is applied to glass melting furnaces for a variety of reasons, some of which are:*

## ***Increased Production***

Oxy-fuel can be used to increase glass melting capacity for a given melting area. Also, when regenerators or a recuperator deteriorate, oxy-fuel can be applied, in part or in total, to maintain the production level desired.

## ***Reduced Emissions***

NOx emissions are reduced substantially with a complete oxy-fuel conversion.

## ***Improved Efficiency***

Whenever oxy-fuel melting is utilized, it will generally provide an improvement in fuel efficiency when compared with traditional air-fuel melting. Other energy savings are obtained with elimination of the combustion air fan and reduction of hot fan energy requirements. The energy savings partially offsets the cost of oxygen.

## ***Increased Furnace Life***

Oxy-fuel eliminates the regenerators or recuperator, which can be the overriding factor that determines life of an air-fuel furnace. With oxy-fuel, life is determined by the melter itself, usually resulting in a longer campaign.

## ***Improved Glass Quality***

With a properly designed oxy-fuel furnace, glass quality will be improved compared to air-fuel melting. An additional benefit is the steady state operation when compared to regenerative melters.

## ***Simplified Operation***

With no regenerators or recuperator, the furnace operation and maintenance are simplified.

## System Approach

A TECO oxy-fuel furnace can improve glass quality and increase campaign life. The key to making this happen is an integrated design approach, considering all the relevant furnace design and operating parameters. This is where TECO's technology and experience make the difference.

## Custom Solutions

Each application is evaluated on a site-specific basis. Consideration is given to the cost of fuel, oxygen and emission control and potential production gain from increased throughput and improved glass quality. TECO, because of its extensive knowledge of glass melting processes, is uniquely qualified to assist and carry out these evaluations and subsequently provide project planning and implementation.

## Oxy-Fuel Benefits

Oxy-fuel makes fuel-fired glass furnaces more efficient and more environmentally friendly by significantly reducing the nitrogen in the combustion process. NO<sub>x</sub> is substantially reduced and the furnace efficiency is improved while eliminating the need for a heat recovery system. New oxy-fuel furnaces, as well as oxy-fuel retrofits and rebuilds, will usually require less capital expense than their air-fuel counterparts. However, the furnace operating cost is often greater due to the added cost of oxygen.

## Capabilities

TECO can provide oxy-fuel furnaces with the following characteristics:

TYPE OF GLASS	CAPACITY		ENERGY CONSUMPTION	
	Metric Tonnes	US Tons	kcal/kg	Million BTU/ton
Container	600	660	890	3.2
Borosilicate	180	200	1400	5.0
Wool Fiber	300	330	850	3.0
Textile Fiber	200	220	1540	5.6
TV Panel	360	400	1040	3.8

OXLEY  
TECO

With more than 75 years experience in glass furnace design and construction, the TECO Group has become a world leader in creating and applying new technologies to glass melting processes.

Our projects include building over 1,000 glass melting furnaces, many supplied on a turnkey basis. We have also designed and built many energy-saving and emission-reduction systems.

TECO understands the glass-making process from a total system standpoint. So, when you make a choice about glass melting, the choice is simple – TECO.



#### **TECO**

Toledo Engineering Co., Inc.  
3400 Executive Parkway  
P.O. Box 2927  
Toledo, OH 43606-2927  
USA  
Phone: +1-419-537-9711  
Fax: +1-419-537-1369  
sales@teco.com

#### **TECOGLAS**

Tecoglas Ltd  
60 Savile Street East  
Sheffield, South Yorkshire  
S4 7UQ England  
Phone: +44 (0) 114-275-9020  
Fax: +44 (0) 114-270-0875  
sales@tecoglas.com

#### **KTG SYSTEMS**

KTG Systems, Inc.  
Stonewood Commons I Suite 110  
101 Bradford Road  
Wexford, PA 15090-6909  
USA  
Phone: +1-724-940-0330  
Fax: +1-724-940-0338  
sales@ktgsi.com

#### **ZEDTEC**

ZEDTEC Ltd.  
60 Savile Street East  
Sheffield, South Yorkshire  
S4 7UQ England  
Phone: +44 (0) 114-275-1248  
Fax: +44 (0) 114-270-0875  
sales@zedtec.com

[www.teco.com](http://www.teco.com)