

帝国窯業株式会社
「炉壁・鉄皮保護材ウォールガード」

Teikoku Yogyo Co., Ltd.
"WALL-GUARD for Protecting Furnace Wall and Steel Parts"

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Abstract

Teikoku Yogyo Co.,Ltd. introduces a superior protective refractory product : WALL-GUARD was developed to prevent clinker adhesion on the incinerator furnace side wall and oxidation of the steel parts of ash melting furnaces,etc..

1. はじめに

ウォールガード (WALL-GUARD) は、長年の経験をもとに、炉壁保護・鉄皮保護を目的に開発した耐火離型材です。本製品の用途は多岐にわたりますが、特にごみ焼却炉・ごみ熔融炉壁へのクリンカー付着防止およびその離型性に優れた材料です。炉壁に本材料を薄く簡易に吹き付けまたは刷毛塗りすることで炉の安定操業に寄与するとともに、使用後炉修理時の付着クリンカーが大幅に低減され、その除去も容易になります。

2. 特徴と品質

- 1) 特殊バインダー使用の緻密質SiC系コーティング皮膜が炉内耐火物の侵食を抑制します。
- 2) 鉄皮への塗布は、耐酸化性の皮膜の効果により、鉄皮の腐食防止に効果的です。
- 3) 市販スプレーガンと工場汎用エアを使用する簡単施工であり、施工に特殊な装置や熟練度は不要です。(Fig.2-(a),(b))
- 4) 施工(塗布)後の乾燥は不要です。ただし、水分を含む不定形耐火物壁面への施工は、不定形耐火物の乾燥後に実施してください。
- 5) 品質表 (Table 1)

3. 実炉適用例

- 1) クリンカー難付着効果：K社 焼却炉 2 次燃焼室 (排ガス入口周辺)
 [効果] 従来は 3 ヶ月操業後エアノズル周辺に 300 ～ 400mm 厚さにてクリンカー付着個所があったが、WALL-GUARD 施工の場合はクリンカー付着は軽

1. Introduction

WALL-GUARD is a parting refractory product which was developed from knowledge based on experience protecting furnace side walls and/or mechanical steel parts of furnaces. This is a superior product which can be applied to a wide variety of industrial furnaces. It is especially useful for refuse incinerators and ash melting furnaces to prevent clinker adhesion on the side walls and to achieve excellent parting performance. Just simple gunning or brushing WALL-GUARD thinly on the furnace wall will contribute to stable furnace operation. It will allow easy removal of clinker during furnace rebuilding after the campaign because of greatly reduced clinker adhesion.

2. Features and quality

- 1) SiC based dense coating layer obtained by using a special binder protects furnace refractory

Table 1 Quality sheet

		WALL-GUARD-S-1
Chemical Composition(%)	Al ₂ O ₃	20 ~ 25
	SiC	60 ~ 65
Water addition (%)		20 ~ 25
Package spec.		20kg/box (5kg×4bags)
Unit consumption		5kg/m ² for 2mm thick gunning

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微かほとんどない状態。(Fig.1-(a),(b))

2) 鉄皮腐食防止：O社 灰溶融炉鉄皮

「効果」従来は腐食が激しいために使用40日にて金属製部材を取り替えていたが、WALL-GUARD施工により部材の腐食が著しく減少し、40日後でも再使用が可能となりライフが2倍になった。(Fig.2-(c),(d))



(a) Without WALL-GUARD



(b) With WALL-GUARD

Fig. 1 Clinker adhesion prevention.

surfaces from corrosion.

- 2) Application to the steel parts of the furnace gives excellent corrosion resistance because of anti-oxidation layer of WALL-GUARD.
- 3) Gunning is simply carried out with a commercial spray gun and standard plant air. No special equipment nor skills are required at all. (Fig.2-(a),(b))
- 4) Drying after gunning of WALL-GUARD is normally not required but it must be gunned on the monolithic refractory surface after the monolithic is dried.
- 5) Quality sheet (Table 1)

3. Performance at the furnaces

- 1) Effect of clinker adhesion prevention at an incinerator secondary combustion room near the exhaust gas inlet. (Fig.1-(a),(b))
 - Without WALL-GUARD : 300-400mm thick clinker adhesion was observed around air nozzle after 3 months of operation. (a)
 - With WALL-GUARD : Even after 3 months of operation, there was very thin or no clinker adhesion observed. (b)
- 2) Anti-oxidation effect on steel parts of ash melting furnace. (Fig.2-(c),(d))
 - Without WALL-GUARD : Steel parts were exchanged every 40 days of operation because of heavy oxidation. (c)
 - With WALL-GUARD : Steel parts were used for 2 campaigns (two 40 days operation) because of much less oxidation. The life of the steel parts was doubled. (d)



(a) Applying WALL-GUARD



(b) After WALL-GUARD being gunned



(c) After 40 days campaign without WALL-GUARD



(d) After 40 days campaign with WALL-GUARD

Fig. 2 Steel parts oxidation prevention.