MIS to Finishing ICS

Version 1.3

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Finishing WG

Abstract

This ICS defines the interface requirements between the *MIS* and a *Postpress Controller*. It defines a set of Gray Boxes that a *MIS* uses to specify the Processes that after expansion it requests Finishing Devices to execute. This ICS defines a two Conformance Levels.

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1   Introduction

1.1   Scope

Finishing can be as simple as one Process or a long chain of Processes. The ordering and completeness are crucial to a successful production. A complex JDF can be generated for a Device with more than one Controller contributing to it. The *MIS* provides to a **Postpress Controller** one or more *Gray Boxes* meeting the criteria specified in section 6 "Conformance Tables – Gray Boxes".

This ICS defines the Interface between the *MIS* and *Postpress Controller*. It specifies Gray Boxes to be expanded to executable Jobs for a *Postpress Controller* that controls Devices that produce Finished Products or Partial Products.

This ICS specifies Elements that comprise a conforming JDF Instance, but does not discuss communication of JDF Instances. See [MIS-ICS], [Base-ICS] and [JDF1.3] for further information about JDF Instances and for communication of JDF Instances.

As an umbrella ICS this ICS does not address device-specific details. This is covered in the respective domain ICSs Sheet Finishing ICS [ShtFin-ICS], Binding ICS [Binding-ICS] that describe the exchange of information on a Device level with *Postpress Controller*.

2   Glossary

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. [JDF1.3]. For most terms, see the Glossary section in [Base-ICS].

This section contains Prepress-related terms that pertain to this ICS:

Table 1: Glossary

Term	Definition
EBNF	Extended Backus Naur Format (see ISO14977:1996)
	String that defines the values with the syntax. In this ICS this is used to define possible values in a *Category* and *Types* Attribute.
	Syntax elements:
	"|" Logical OR
	"[ ]" Optional element
	"{ }" Optional repeat (i.e. one or more)
	"( )" Grouping
Gray Box	See the Glossary section in [MIS-ICS].
GB MISFin Types Value	A single *Types* value from the Table 4: Abstract GB MISFin – Types Attribute
MIS	A system that communicates with a production *Production Workflow System* using JDF Instances and JMF Messages. The term **Manager** refers to the *MIS* in this ICS.
Partial Product	A portion of a *Product*, such as a cover, Insert or Signature.
Production Workflow System	A Device or Controller that conforms to this ICS and consumes JDF Instances and JMF Messages defined herein. A *Production Workflow System* is software and it may be part of a Prepress, Press or Postpress Device. The term Worker refers to the *Production Workflow System* in this ICS.

Term	Definition
Press Controller	A JDF Controller (or Device) that controls a printing press. It communicates with *MIS* and a *Production Workflow System*.
Postpress Controller	A JDF Controller (or Device) that controls a Postpress Device. It communicates with *MIS* and optionally with a *Production Workflow System*.
Product	Completed output of a production process, such as a book, magazine, document, brochure or single-sheet collateral.

3   Conformance Levels

This ICS defines two Conformance Levels, namely Level 1 and 2.

The information in this ICS is synchronized with the [MISPRE-ICS] and a future Prepress to Finishing ICS.

See Appendix A "*How to Read ICS Documents*" in [Base-ICS] for an explanation of Conformance Tables.

To be conformant to a level of this ICS specified in the first column of Table 2, an *MIS* MUST conform to the Manager part and a *Postpress Controller* MUST conform to the Worker part of the ICS and levels specified in all but the first and last columns of Table 2 below.

Table 2: Conformance Levels

Level of this ICS	[Base-ICS]	[JMF-ICS]	[MIS-ICS]	Description
1	2	1 or higher	2 or higher	This level mainly defines the composition of a Product with components and Processes.
2	2	2	2 or higher	This level adds more details for Process parameters.

4   Conformance Tables – JDF Instances

4.1   JDF Node

Table 3: JDF Node

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Category	w			r			To be conformant to this ICS, a Manager MUST Support all of the *Gray Boxes* (specified as *Category* values) in at least one of the bulleted items below: • `MISFin.BoxMaking.` • `MISFin.SheetFin` and

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							`MISFin.StitchFin.` • `MISFin.SheetFin` and `MISFin.SoftcoverFin.` • `MISFin.SheetFin` and `MISFin.HardcoverFin.` To be conformant to this ICS, a Worker MUST Support at least one *Gray Box* (i.e. at least one *Category* value). **r-Test:** see @Types.
`MISFin.BoxMaking`	w?			r?			
`MISFin.SheetFin`	w?			r?			
`MISFin.InsertFin`	w?			r?			
`MISFin.StitchFin`	w?			r?			
`MISFin.SoftcoverFin`	w?			r?			
`MISFin.HardcoverFin`	w?			r?			
ICSVersions	w			r?			**r-Test:** see @Types.
`MISFin_L1-1.3`	w←			r?			
`MISFin_L2-1.3`		w←		r?			
Type	w			r			**r-Test:** see @Types.
`ProcessGroup`	w			r			
all remaining values	! w			r?			
Types	w			r			The mandated values of *Types* for each *Gray Box* of this ICS are those values specified in its subsection of section 6 "Conformance Tables – Gray Boxes" along with the values of section 6.1 "*Abstract GB MISFin*". The Manager MUST list *Types* values in the order for producing the final *Product*. **r-Test:** The respective values for *Category*, *ICSVersions*, *Type* and *Types* in this ICS MUST result in a expansion of the *Gray Box*. The expansion MUST contain all *Types* values supplied in the *Gray Box*. The Worker MUST reject JDF Instances with *Types* values that the Worker does not Support.

5 Gray Boxes

5.1 Overview

For the Postpress sector, most *MISs* do not have enough information to specify in detail parameters and Processes for Postpress. *Gray Boxes* are defined in this ICS so that an *MIS* can send partially specified JDF Instances to *Postpress Controllers* .

5.2 Gray Box Examples

Gray Boxes and Processes provide two different ways to describe a workflow. *Gray Boxes* offer simplicity. By contrast, separate Process Nodes allow more control and greater specification of details than *Gray Boxes*.

Figure 1: Example for a Gray Box
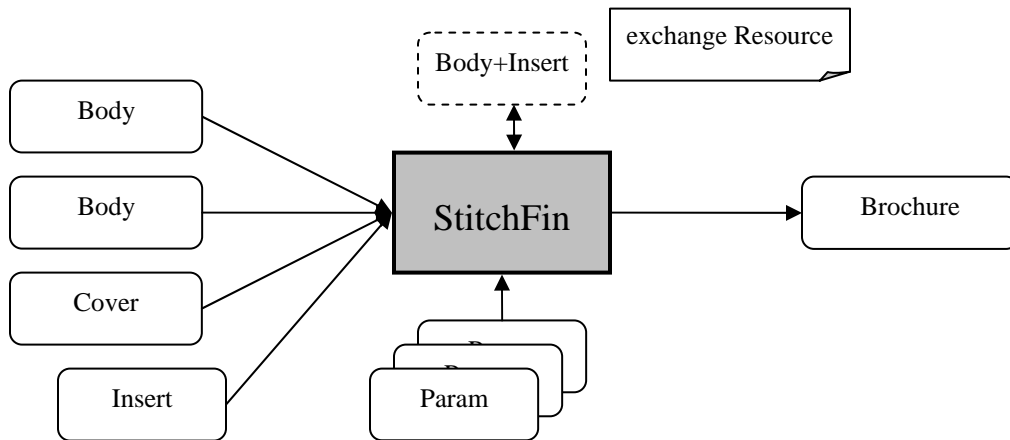
6 Conformance Tables – Gray Boxes

This section specifies Conformance Tables for the *Gray Boxes*.

The first subsection (section 6.1 "Abstract GB MISFin") specifies an Abstract *Gray Box* which MUST NOT be used by itself but rather acts as an abstract superclass for all other *Gray Boxes* defined in this section .

Each subsection of this section specifies one *Gray Box* and has a few notes along with three Conformance Tables: one for *Types* values, another for input Resources and a third for output Resources. The Abstract GB MISFin has an additional table for exchange Resources. The notes include a short description of the action associated with the Gray Box..

6.1 Abstract GB MISFin

When a *Postpress Controller* expands a *Gray Box*, it creates new JDF Nodes. Each JDF Node MUST have a unique *JobPartID* value . For details, see [Base-ICS].

Table 4: Abstract GB MISFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Types	w			r			The *Types* values in this table apply to all *Gray Boxes* in this ICS . The *Types* values MUST be listed in the the order that they are to be executed, e.g. the Process steps needed for packing. Each table for a concrete *Gray Box* defines additional values for *Types*. The value of this Attribute MUST consist of one or more *Types* values defined in a table for a concrete *Gray Box* followed by zero or more *Types* values defined in this table. **r-Test:** see JDF/@Types in Table 3.
BoxPacking	w?			r←			MUST be read if Worker Supports operation.
Bundling	w?			r←			MUST be read if Worker Supports operation.
Labeling	w?			r←			MUST be read if Worker Supports operation.
Palletizing	w?			r←			MUST be read if Worker Supports operation.
PrintRolling	w?			r←			MUST be read if Worker Supports operation.
Shrinking	w?			r←			MUST be read if Worker Supports operation.
Stacking	w?			r←			MUST be read if Worker Supports operation.
Strapping	w?			r←			MUST be read if Worker Supports operation.
Verification	w?			r←			MUST be read if Worker Supports operation.
Wrapping	w?			r←			MUST be read if Worker Supports operation.

Table 5: Abstract GB MISFin – Input Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Component (Label)	w←			r?			MUST be present if *Labeling* is in *Types*. See Table 35: Component.
BoxPackingParams	w←			r?			MUST be present if *BoxPacking* is in *Types*. See Table 29: BoxPackingParams.
BundlingParams	w←			r?	r		MUST be present if *Bundling* is in *Types*. See Table 31: BundlingParams.
IdentificationField	w←			r			MUST be present if *Verification* is in *Types*. See Table 53: IdentificationField.

Name	Manager			Worker			Description
Level ➜	**1**	**2**	**3**	**1**	**2**	**3**	
LabelingParams	w←			r?	r		MUST be present if *Labeling* is in **Types**. See Table 56: LabelingParams.
PalletizingParams	w←			r?	r		MUST be present if *Palletizing* is in **Types**. See Table 60: PalletizingParams.
PrintRollingParams	w←			r?	r		MUST be present if *PrintRolling* is in **Types**. See Table 63: PrintRollingParams.
ShrinkingParams	w←			r?	r		MUST be present if *Shrinking* is in **Types**. See Table 65: ShrinkingParams.
StackingParams	w←			r?	r		MUST be present if *Stacking* is in **Types**. See Table 68: StackingParams.
Strap	w←			r?	r		MUST be present if *Strapping* is in **Types**. See Table 70: Strap.
StrappingParams	w←			r?	r		MUST be present if *Strapping* is in **Types**. See Table 71: StrappingParams.
VerificationParams	w←			r?			MUST be present if *Verification* is in **Types**. See Table 77: VerificationParams.
WrappingParams	w←			r?	r		MUST be present if *Wrapping* is in **Types**. See Table 78: WrappingParams.

Table 6: Abstract GB MISFin – Exchange Resources

Name	Manager			Worker			Description
Level ➜	**1**	**2**	**3**	**1**	**2**	**3**	
Component	w←			r			An intermediate **Component** MUST be present if the output **Component** of the *Gray Box* does not represent individual *Products*. This intermediate **Component** (@PipeProtocol="Internal") represents the final *Product* and specifies with @Amount the amount of individual *Products* to be produced. See also section 3.6 of MIS ICS. See Table 35: Component.

Table 7: Abstract GB MISFin – Output Resources

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Component	w			r			MUST be defined for the last Process. See Table 35: Component.

6.2 GB *BoxMaking*

Table 8: GB BoxMaking – Types Attribute

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Types	w			r			A Manager MUST be able to write all of the following values: • *ShapeCutting* • *BoxFolding* • *ShapeCutting BoxFolding* **r-Test:** see JDF/@Types in Table 3.
BoxFolding	w?			r←			MUST be read if Worker Supports operation.
Cutting	w?			r←			MUST be read if Worker Supports operation.
Embossing	w?			r←			MUST be read if Worker Supports operation.
Inserting	w?			r←			MUST be read if Worker Supports operation.
ManualLabor	w?			r←			MUST be read if Worker Supports operation.
ShapeCutting	w?			r←			MUST be read if Worker Supports operation.

Table 9: GB BoxMaking – Input Resources

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Component	w			r			See Table 35: Component.
Component (Child)	w←			r			MUST be present if *Inserting* is in *Types*. See Table 35: Component.
Component (Application)	! w			r?			Use *Inserting* instead of BoxApplication. See [JDF1.3].
Media	w←			r			MUST be present if *Embossing* is present in *Types* and (EmbossingParams/Emboss/

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							@EmbossingType = "FoilEmbossing" or EmbossingParams/Emboss/ @EmbossingType = "FoilStamping"). See Table 59: Media.
BoxFoldingParams	w←			r?			MUST be present if `BoxFolding` is in *Types*. See Table 28: BoxFoldingParams.
CuttingParams	w←			r			MUST be present if `Cutting` is in *Types*. See Table 40: CuttingParams.
EmbossingParams	w←			r			MUST be present if `Embossing` is in *Types*. See Table 43: EmbossingParams.
InsertingParams	w←			r			MUST be present if `Inserting` is in *Types*. See Table 54: InsertingParams.
ManualLaborParams	w←			r			MUST be present if `ManualLabor` is in *Types*. See Table 58: ManualLaborParams.
ShapeCuttingParams	w			r			See Table 64: ShapeCuttingParams.
Tool.	w←			r			MUST be present if `Embossing` is present in *Types* or (if `ShapeCutting` is present in *Types* and the Device is a conventional diecutting Device). See Table 74: Tool.

Table 10: GB BoxMaking – Output Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

6.3   GB *HardcoverFin*

Produces hard cover books in many variations.

Table 11: GB HardcoverFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Types	w			r			A Manager MUST be able to write all the following values expressed in EBNF:

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
							CaseMaking Gathering (*ThreadSewing EndSheetGluing* | *EndSheetGluing SpinePreparation*) *SpineTaping* [*Cutting*] *Trimming BlockPreparation* [*SpineTaping*] *HeadBandApplication CasingIn* [*Jacketing*] *Stacking.*
							Typical ordering of values expressed in EBNF. Other sequences MAY be specified.
							CaseMaking [{*Inserting*}] *Gathering* (*ThreadSewing EndSheetGluing* | *EndSheetGluing SpinePreparation*) (*SpineTaping* | *Gluing*) [*Cutting*] *Trimming* [*BlockPreparation*] [*SpineTaping*] [*HeadBandApplication*] *CasingIn* [*Jacketing*] [{*Inserting*}] [{*GB MISFin Types Value*}]. **r-Test:** see JDF/@Types in Table 3.
BlockPreparation	w?			r←			MUST be read if Worker Supports operation.
CaseMaking	w?			r←			MUST be read if Worker Supports operation.
CasingIn	w			r←			MUST be read if Worker Supports operation.
Cutting	w←			r←			MUST be present if n-up Product is cut apart. MUST be read if Worker Supports operation.
EndSheetGluing	w			r←			MUST be read if Worker Supports operation.
Gathering	w			r←			MUST be read if Worker Supports operation.
Gluing	w?			r←			MUST be read if Worker Supports operation.
HeadBandApplication	w?			r←			MUST be read if Worker Supports operation.
Inserting	w←			r←			MUST be present if *Product* has Inserts. MUST be read if Worker Supports operation.
Jacketing	w←			r←			MUST be present if *Product* has jacket. MUST be read if Worker Supports operation.
SpinePreparation	w←			r←			MUST be present if *Product* is not thread sewed. MUST be read if Worker Supports operation.
SpineTaping	w←			r←			MUST be present if *Product* is spine taped. MUST be read if Worker Supports operation.
ThreadSewing	w←			r←			MUST be present if Product thread sewed.
Trimming	w			r←			MUST be read if Worker Supports operation.

Table 12: GB HardcoverFin – Input Resources

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Component	w			r			All gathered components MUST be present. See Table 35: Component.
Component (Case)	w←			r			MUST be defined if *CasingIn* is present in *Types* and *CaseMaking* is not present in *Types*. See Table 35: Component.
Component (Child)	w←			r			All inserted (children) components MUST be present. See Table 35: Component.
Component (CoverMaterial)	w←			r			Either **Component** (CoverMaterial) or **Media** (CoverMaterial) for cover material MUST be present if *CaseMaking* is present in *Types*. See Table 35: Component.
Media (CoverMaterial)	w←			r			Either **Component** (CoverMaterial) or **Media** (CoverMaterial) for cover material MUST be present if *CaseMaking* is present in *Types*. See Table 59: Media.
Media (CoverBoard)	w←			r			Either **Component** or **Media** for cover material MUST be present if *CaseMaking* is present in *Types*. See Table 59: Media.
Media (SpineBoard)	w←			r			Either **Component** or **Media** for cover material MUST be present if *CaseMaking* is present in *Types*. See Table 59: Media.
Assembly	w←			r			MUST be provided if (@BindingSide != "Left" or @JogSide != "Top"). See Table 26: Assembly.
BlockPreparationParams	w←			r			MUST be present if *BlockPreparation* is in *Types*. See Table 27: BlockPreparationParams.
CaseMakingParams	w←			r?	r		MUST be present if *CaseMaking* is in *Types*. See Table 32: CaseMakingParams.
CasingInParams	w←			r?			MUST be present if *CasingIn* is in

Name or Value	Manager			Worker			Description
Level ➔	**1**	**2**	**3**	**1**	**2**	**3**	
							Types. See Table 33: CasingInParams.
CuttingParams	w←			r?			MUST be present if `Cutting` is in *Types*. See Table 40: CuttingParams.
EndSheetGluingParams	w←			r?			MUST be present if `EndSheetGluing` is in *Types*. See Table 45: EndSheetGluingParams.
GatheringParams	w←			r?			MUST be present if `Gathering` is in *Types*. See Table 48: GatheringParams.
GluingParams	w←			r?	r		MUST be present if `Gluing` is in *Types*. See Table 50: GluingParams.
HeadBandApplicationParams	w←			r?	r		MUST be present if `HeadBandApplication` is in *Types*. See Table 52: HeadBandApplicationParams.
InsertingParams	w←			r			MUST be present if `Inserting` is in *Types*. See Table 54: InsertingParams.
JacketingParams	w←			r?	r		MUST be present if `Jacketing` is in *Types*. See Table 55: JacketingParams.
SpinePreparationParams	w←			r?			MUST be present if `SpinePreparation` is in *Types*. See Table 66: SpinePreparationParams.
SpineTapingParams	w←			r?	r		MUST be present if `SpineTaping` is in *Types*. See Table 67: SpineTapingParams.
ThreadSewingParams	w←			r?	r		MUST be present if `ThreadSewing` is in *Types*. See Table 73: ThreadSewingParams.
TrimmingParams	w←			r			MUST be present if `Trimming` is in *Types*. See Table 76: TrimmingParams.

Table 13: GB Hardcover*Fin* – Output Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

6.4 GB *InsertFin*

This *Gray Box* represents the use case, where a Product is already bound and one or more Inserts are added. Typically the **Product** is trimmed as well. In case of an n-up production the *Products* are cut apart.

Table 14: GB InsertFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Types	w			r			A Manager MUST be able to write all the following values expressed in EBNF: *Inserting* [*Trimming*]. Typical ordering of values expressed in EBNF. Other sequences MAY be specified. [*Cutting*] {*Inserting*} [*Trimming*] [{*GB MISFin Types Value*}]. **r-Test:** see JDF/@Types in Table 3.
Cutting	w←			r←			MUST be present if n-up **Product** is cut apart. MUST be read if Worker Supports operation.
Inserting	w			r←			MUST be read if Worker Supports operation.
Trimming	w←			r←			MUST be present if **Product** is trimmed. MUST be read if Worker Supports operation.

Table 15: GB InsertFin – Input Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Component	w			r			The bound (mother) component MUST be present. See Table 35: Component.
Component (Child)	w			r			All inserted (children) components MUST be present. See Table 35: Component.

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
CuttingParams	w←			r?			MUST be present if *Cutting* is in *Types*. See Table 40: CuttingParams.
InsertingParams	w			r			See Table 54: InsertingParams.
TrimmingParams	w←			r			MUST be present if *Trimming* is in *Types*. See Table 76: TrimmingParams.

Table 16: GB InsertFin – Output Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

6.5   GB *SheetFin*

Produces finished Sheets.

Table 17: GB SheetFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Types	w			r			A Manager MUST be able to write all the following values: • *Cutting* • *Folding* • *Cutting Folding* Typical ordering of values expressed in EBNF. Other sequences MAY be specified. [*Cutting*] [*Creasing*] [*Perforating*] [*Folding*] [*Gluing*] [*ThreadSealing*] [{*GB MISFin Types Value*}]. **r-Test:** see JDF/@Types in Table 3.
Creasing	w?			r←			MUST be read if Worker Supports operation.
Cutting	w←			r←			MUST be present if *Product* is cut. MUST be read if Worker Supports operation.
Folding	w←			r←			MUST be present if *Product* is folded. MUST be read if Worker Supports operation.

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Gluing	w?			r←			MUST be read if Worker Supports operation.
Perforating	w?			r←			MUST be read if Worker Supports operation.
ThreadSealing	w←			r←			MUST be present if *Product* is thread sealed. MUST be read if Worker Supports operation.

Table 18: GB SheetFin – Input Resources

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Component	w			r			See Table 35: Component.
CreasingParams	w←			r?	r		MUST be present if *Creasing* is in *Types*. See Table 38: CreasingParams.
CuttingParams	w←			r?			MUST be present if *Cutting* is in *Types*. See Table 40: CuttingParams.
FoldingParams	w←			r			MUST be present if *Folding* is in *Types*. See Table 47: FoldingParams.
GluingParams	w←			r?	r		MUST be present if *Gluing* is in *Types*. See Table 50: GluingParams.
PerforatingParams	w←			r?	r		MUST be present if *Perforating* is in *Types*. See Table 61: PerforatingParams.
ThreadSealingParams	w←			r?	r		MUST be present if *ThreadSealing* is in *Types*. See Table 72: ThreadSealingParams.

Table 19: GB SheetFin – Output Resources

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

6.6 GB *SoftcoverFin*

Produces a bound *Product* with a soft cover from multiple input components.

Table 20: GB SoftcoverFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Types	w			r←			A Manager MUST be able to write all the following values expressed in EBNF: `Gathering SpinePreparation` `[SpineTaping] [Folding]` `CoverApplication [Cutting] Trimming` `Stacking`. Typical ordering of values expressed in EBNF. Other sequences MAY be specified. `[Folding] [{Inserting}] Gathering` `[(ThreadSewing | [SpinePreparation]` `[(Gluing | SpineTaping)])]` `[SpinePreparation] CoverApplication` `[Buffer] [Cutting] Trimming [Jacketing]` `[{Inserting}] [{`*GB MISFin Types Value*`}]`. **r-Test:** see JDF/@Types in Table 3.
Buffer	w?			r←			MUST be read if Worker Supports operation.
CoverApplication	w			r←			MUST be read if Worker Supports operation.
Cutting	w←			r←			MUST be present after `CoverApplication` if n-up *Product* is cut apart. MUST be read if Worker Supports operation.
Folding	w←			r←			MUST be present before `CoverApplication` if cover has flaps. MUST be read if Worker Supports operation.
Gathering	w←			r←			MUST be present unless input **Component** is a "bookblock", e.g. (@ProductType="BookBlock"). MUST be read if Worker Supports operation.
Gluing	w?			r←			May be present in case of pre-gathering where blocks are glued off. MUST be read if Worker Supports operation.
Inserting	w←			r←			MUST be present if *Product* has Inserts. MUST be read if Worker Supports operation.
Jacketing	w←			r←			MUST be present if *Product* has jacket. MUST be read if Worker Supports operation.
SpinePreparation	w←			r←			MUST be present if `ThreadSewing` is not in *Types*. MUST be read if Worker Supports operation.
SpineTaping	w←			r←			MUST be present if *Product* is spine taped. MUST be read if Worker Supports operation.

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ThreadSewing	w←			r←			MUST be present if *Product* thread sewed. MUST be read if Worker Supports operation.
Trimming	w			r←			MUST be read if Worker Supports operation.

Table 21: GB SoftcoverFin – Input Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Component	w			r			All gathered components MUST be present. See Table 35: Component.
Component (Cover)	w			r			The cover component MUST be present. See Table 35: Component.
Component (Child)	w←			r			All inserted (children) components MUST be defined. See Table 35: Component.
Assembly	w←			r			MUST be provided if (Assembly/@BindingSide != "Left" or Assembly/@JogSide !="Top"). See Table 26: Assembly.
BufferParams	w←			r			MUST be present if *Buffer* is in *Types*. See Table 30: BufferParams.
CoverApplicationParams	w←			r			MUST be present if *CoverApplication* is in *Types*. See Table 36: CoverApplicationParams.
CuttingParams	w←			r?			MUST be present if *Cutting* is in *Types*. See Table 40: CuttingParams.
FoldingParams	w←			r			MUST be present if *Folding* is in *Types*. See Table 47: FoldingParams.
GatheringParams	w←			r?			MUST be present if *Gathering* is in *Types*. See Table 48: GatheringParams.
GluingParams	w←			r?	r		MUST be present if *Gluing* is in *Types*. See Table 50: GluingParams.
InsertingParams	w←			r			MUST be present if *Inserting* is in *Types*. See Table 54: InsertingParams.
JacketingParams	w←			r?	r		MUST be present if *Jacketing* is in *Types*. See Table 55: JacketingParams.

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
SpinePreparationParams	w←			r?			MUST be present if *SpinePreparation* is in *Types*. See Table 66: SpinePreparationParams.
SpineTapingParams	w←			r?	r		MUST be present if *SpineTaping* is in *Types*. See Table 67: SpineTapingParams.
ThreadSewingParams	w←			r?	r		MUST be present if *ThreadSewing* is in *Types*. See Table 73: ThreadSewingParams.
TrimmingParams	w←			r			MUST be present if *Trimming* is in *Types*. See Table 76: TrimmingParams.

Table 22: GB SoftcoverFin – Output Resources

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

6.7 GB *StitchFin*

Produces a stitched *Product* as described in [Binding-ICS].

Table 23: GB StitchFin – Types Attribute

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Types	w			r			A Manager MUST be able to write all the following values expressed in EBNF: *Collecting Stitching* [*Cutting*] *Trimming Stacking*. Typical ordering of values expressed in EBNF. Other sequences MAY be specified. [{*Inserting*}] [*Folding*] *Collecting Stitching* [*Collecting*] [*Stitching*] [*Cutting*] [*Trimming*] [{*Inserting*}] [{*GB MISFin Types Value*}]. **r-Test:** see JDF/@Types in Table 3.

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Collecting	w			г←			MUST be read if Worker Supports operation.
Cutting	w←			г←			MUST be present for a n-up production. MUST be read if Worker Supports operation.
Folding	w←			г←			MUST be present if cover has to be folded. MUST be read if Worker Supports operation.
Inserting	w←			г←			MUST be present if **Product** has Inserts. MUST be read if Worker Supports operation.
Stitching	w			г←			MUST be read if Worker Supports operation.
Trimming	w←			г←			MUST be present if **Product** is trimmed. MUST be read if Worker Supports operation.

Table 24: GB StitchFin – Input Resources

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Component	w			г			All collected components MUST be present. See Table 35: Component.
Component (Child)	w←			г			All inserted (children) components MUST be present. See Table 35: Component.
Assembly	w←			г			MUST be provided if (Assembly/@BindingSide != "Left" or Assembly/@JogSide !="Top"). See Table 26: Assembly.
CollectingParams	w?			г?			MUST be present if *Collecting* is in **Types**. See Table 34: CollectingParams.
CuttingParams	w←			г?			MUST be present if *Cutting* is in **Types**. See Table 40: CuttingParams.
FoldingParams	w←			г			MUST be present if *Folding* is in **Types**. See Table 47: FoldingParams.
InsertingParams	w←			г			MUST be present if *Inserting* is in **Types**. See Table 54: InsertingParams.
StitchingParams	w←			г?	г		MUST be present if *Stitching* is in **Types**. See Table 69: StitchingParams.
TrimmingParams	w←			г			MUST be present if *Trimming* is in **Types**. See Table 76: TrimmingParams.

Table 25: GB StitchFin – Output Resources

Name	Manager			Worker			Description
Level ➔	**1**	**2**	**3**	**1**	**2**	**3**	
							Only the Output Resources of the *Abstract GB MISFin*. See Table 7: Abstract GB MISFin – Output Resources.

7   Conformance Tables – Resources

This section specifies Conformance Tables for many Resources. The Resources appear in alphabetical order.

Each subsection specifies one Resource with a few notes, Resource Properties, and one or more Conformance Tables.

For all Attributes the following **r-Test** applies.

r-Test: The value MUST be present in the Resources linked in the expanded Process Node or the value MUST be displayed on a console of a Device or Device simulator.

7.1   Assembly

Table 26: Assembly

Input to: *GB HardcoverFin*, *GB SoftcoverFin*, *GB StitchFin*

Name or Value	Manager			Worker			Description
Level ➔	**1**	**2**	**3**	**1**	**2**	**3**	
AssemblyIDs	w			r			*AssemblyIDs* MUST include all Component/@AssemblyIDs to be assembled. Order of IDs MUST match the order of assembling the components; for: • Collecting : First value is the cover. • Gathering : First value is the front.
BindingSide	w			r			
all values	w?			r			
JogSide	w			r			
None	!w			r?			
all remaining values	w?			r			
Order	w			r			
Collecting	w←			r			For **GB StitchFin**.
Gathering	w←			r			For **GB SoftcoverFin**.
all remaining values	!w			r?			

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
PartIDKeys	! w			r?			
AssemblySection	! w			r?			See [JDF1.3].

7.2 BlockPreparationParams

Table 27: BlockPreparationParams

Input to: *GB HardcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
TightBacking	w			r			
all values	w←			r			

7.3 BoxFoldingParams

Table 28: BoxFoldingParams

Input to: *GB BoxMaking*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
DescriptiveName	w			r			The name that uniquely defines the shape to be produced on the folder/gluer. **Note:** this is a temporary [JDF1.3] work-around.
BoxApplication	! w			r?			Instead, use **Inserting** in *Types* and expand to a Combined Process. See [JDF1.3].

7.4 BoxPackingParams

Table 29: BoxPackingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.5   BufferParams

Table 30: BufferParams

Input to: *GB SoftcoverFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.6   BundlingParams

Table 31: BundlingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Copies		w←			r		Either *Copies* or *Length* MUST be present.
Length		w←			r		Either *Copies* or *Length* MUST be present.

7.7   CaseMakingParams

Table 32: CaseMakingParams

Input to: *GB HardcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
CoverWidth		w			r		
Height		w			r		
SpineWidth		w			r		

7.8   CasingInParams

<div align="center">

Table 33: CasingInParams

Input to: *GB HardcoverFin*

</div>

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.9   CollectingParams

<div align="center">

Table 34: CollectingParams

Input to: *GB StitchFin*

</div>

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.10 Component

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Table 35: Component

Input to: *Abstract GB MISFin*, *GB BoxMaking*, *GB SheetFin*, *GB HardcoverFin*, *GB InsertFin*, *GB SoftcoverFin*, *GB StitchFin*

Exchanged between: *Abstract GB MISFin*

Output from: *Abstract GB MISFin*

</div>

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Dimensions	w←			r			MUST be defined for labels, Inserts and covers.
SurfaceCount	w←			r			A Manager MUST supply *SurfaceCount* for all input **Component** Resources of *Gathering* and *Collecting*.
ProductType	w←			r			MUST be written for *GB BoxMaking*.
BlankBox	w←			r←			MUST be read for *GB BoxMaking*.
FlatBox	w←			r←			MUST be read for *GB BoxMaking*.
BlankSheet	w←			r←			MUST be read for *GB BoxMaking*. This value is defined in this ICS and is not in [JDF1.3].

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
BlankWeb	w←			r←			MUST be read for *GB BoxMaking*. This value is defined in this ICS and is not in [JDF1.3].
Insert	w←			r←			MUST be read for *GB BoxMaking*.
Sheet	w←			r←			MUST be read for *GB BoxMaking*. This value is defined in this ICS and is not in [JDF1.3].
Web	w←			r←			MUST be read for *GB BoxMaking*. This value is defined in this ICS and is not in [JDF1.3].
Layout	w?			r?			The **Layout** Resource is used only to reference the **Media** (useful only for flatwork components made from 1 **Media**). See Table 57: Layout.

7.11 CoverApplicationParams

Table 36: CoverApplicationParams

Input to: *GB SoftcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
GlueApplication		w			r		See [JDF1.3].
Score		w←			r		MUST be present if Product has scores. See Table 37: Score.

7.11.1 Score

Table 37: Score

Referenced by: **CoverApplicationParams**

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Side		w			r		

7.12 CreasingParams

Table 38: CreasingParams

Input to: *GB SheetFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Crease		w			r		See Table 39: Crease.

7.12.1 Crease

Table 39: Crease

Referenced by: **CreasingParams**

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Depth		w?			r		

7.13 CuttingParams

Table 40: CuttingParams

Input to: *GB BoxMaking*, *GB SheetFin*, *GB HardcoverFin*, *GB InsertFin*, *GB SoftcoverFin*, *GB StitchFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.14 DieLayout

Table 41: DieLayout

Referenced by: **ShapeCuttingParams**, SourceResource

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ProductID	w			r			Unique identification of the **DieLayout**.
Station	w			r			See Table 42: Station.

7.14.1 Station

Table 42: Station
Referenced by: DieLayout

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
AssemblyIDs	w			r			MUST be linked to Component/@AssemblyIDs. **Note:** *AssemblyIDs* was added to the Station Element in the [JDF1.3Errata3].
StationAmount	w			r			
StationName	w←			r			MUST be present if more than 1 Station is present in **DieLayout**.

7.15 EmbossingParams

Table 43: EmbossingParams
Input to: *GB BoxMaking*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Emboss	w			r			For *MIS* a single Emboss Element of a certain *EmbossingType* means that this kind of embossing needs to happen without specifying the exact number of Elements. See Table 44: Emboss.

7.15.1 Emboss

Table 44: Emboss
Referenced by: EmbossingParams

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
EmbossingType	w			r			

7.16 EndSheetGluingParams

Table 45: EndSheetGluingParams

Input to: *GB HardcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.17 Fold

Table 46: Fold

Referenced by: **FoldingParams**

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
From		w			r		
Front		w←			r		
Left		w←			r		
To		w			r		
Up		w←			r		
Down		w←			r		
RelativeTravel		w←			r		MUST be written unless *Travel* is present.
Travel		w?			r		see [JDF1.3] for precedence.

7.18 FoldingParams

Table 47: FoldingParams

Input to: *GB SheetFin*, *GB SoftcoverFin*, *GB StitchFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
FoldCatalog	w←			r			MUST be present if no **Fold** Resource is defined. If folding scheme does not correspond to a predefined fold catalog entry, Fn-x can be specified, where n = number of pages. (Example F4-x, where x stands for the allowed value).

Name or Value		Manager			Worker			Description
	Level ➔	1	2	3	1	2	3	
Fold			w?			r		MUST not be present if *FoldCatalog* is defined. See Table 46: Fold.

7.19 GatheringParams

Table 48: GatheringParams

Input to: *GB HardcoverFin*, *GB SoftcoverFin*

Name		Manager			Worker			Description
	Level ➔	1	2	3	1	2	3	
								All Attributes and Subelements are optional.

7.20 GlueLine

Table 49: GlueLine

Referenced by: Glue, **InsertingParams**

Name or Value		Manager			Worker			Description
	Level ➔	1	2	3	1	2	3	
GlueType			w			r		
all values			w?			r		

7.21 GluingParams

Table 50: GluingParams

Input to: *GB SheetFin*, *GB HardcoverFin*, *GB SoftcoverFin*

Name or Value		Manager			Worker			Description
	Level ➔	1	2	3	1	2	3	
GluingProductionID			w←			r		MUST be present if Glue Element is not specified.
Glue			w←			r		MUST be present if *GluingProductionID* is not present. See Table 51: Glue.

7.21.1 Glue

Table 51: Glue
Referenced by: GluingParams

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
GlueLine		w			r		See Table 49: GlueLine.

7.22 HeadBandApplicationParams

Table 52: HeadBandApplicationParams
Input to: GB HardcoverFin

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
BottomBrand		w←			r		MUST be written if different from *TopBrand*.
TopBrand		w			r		

7.23 IdentificationField

Table 53: IdentificationField
Input to: Abstract GB MISFin

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Encoding	w			r			
EncodingDetails	w←			r			MUST be written for *Encoding* = "Barcode".
Value	w			r			

7.24 InsertingParams

Table 54: InsertingParams

Input to: *GB BoxMaking*, *GB HardcoverFin*, *GB InsertFin*, *GB SoftcoverFin*, *GB StitchFin*

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
InsertLocation	w			r			
Back	w?			r			
FinishedPage	w?			r⬅			MUST be read for all *Gray Boxes* except **GB BoxMaking**.
Front	w?			r			
Method	w			r			
BindIn	w?			r			
BlowIn	w?			r			
GlueLine		w⬅			r		MUST be written if @Method="BindIn". See Table 49: GlueLine.

7.25 JacketingParams

Table 55: JacketingParams

Input to: *GB HardcoverFin*, *GB SoftcoverFin*

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
FoldingWidth		w			r		

7.26 LabelingParams

Table 56: LabelingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Application		w			r		
all values		w?			r		
Position		w?			r		

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
all values		w←			r		

7.27 Layout

Table 57: Layout

Referenced by: Component

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Media	w			r			See Table 59: Media.

7.28 ManualLaborParams

Table 58: ManualLaborParams

Input to: GB BoxMaking

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
LaborType	w			r			
SeparateBlanks	w←			r			MUST be written to describe manual blanking of a Component[@ProductType="BlankBox"] from its Sheet. This value is defined in this ICS and is not in [JDF1.3].

7.29 Media

Table 59: Media

Referenced by: Layout

Input to: GB BoxMaking, GB HardcoverFin,

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
ProductID	w			r			
MediaType	w			r			
MediaTypeDetails	w?			r			

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
MediaUnit	w←			r			MUST be present if this **Media** is an Input Resource of *Embossing* and @MediaType="Foil". (for counting).

7.30 PalletizingParams

Table 60: PalletizingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
MaxHeight		w?			r		

7.31 PerforatingParams

Table 61: PerforatingParams

Input to: *GB SheetFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Perforate		w?			r		See Table 62: Perforate.

7.31.1 Perforate

Table 62: Perforate

Referenced by: *PerforatingParams*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional..

7.32 PrintRollingParams

Table 63: PrintRollingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Copies		w?			r		
MaxDiameter		w?			r		

7.33 ShapeCuttingParams

Table 64: ShapeCuttingParams

Input to: *GB BoxMaking*

Name	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
DeliveryMode	w			r			
all values	w?			r			
DieLayout	w			r			See Table 41: DieLayout.

7.34 ShrinkingParams

Table 65: ShrinkingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
ShrinkingMethod		w?			r		
ShrinkHot		w?			r		
ShrinkCool		w?			r		

7.35 SpinePreparationParams

Table 66: SpinePreparationParams

Input to: *GB HardcoverFin*, *GB SoftcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
							All Attributes and Subelements are optional.

7.36 SpineTapingParams

Table 67: SpineTapingParams

Input to: *GB HardcoverFin*, *GB SoftcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
StripMaterial		w			r		
all values		w←			r		

7.37 StackingParams

Table 68: StackingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Compensate		w?			r		
LayerAmount		w?			r		
StandardAmount		w			r		

7.38 StitchingParams

Table 69: StitchingParams

Input to: *GB StitchFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Angle	! w			r?			
NumberOfStitches		w			r		
Offset	! w			r?			
StitchType		w			r		
Saddle		w			r		
all remaining values	! w			r?			

7.39 Strap

Table 70: Strap

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
Material		w			r		
all values		w←			r		

7.40 StrappingParams

Table 71: StrappingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
StrappingType		w?			r		
all values		w←			r		

7.41 ThreadSealingParams

Table 72: ThreadSealingParams

Input to: *GB SheetFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ThreadMaterial		w			r		
all values		w←			r		

7.42 ThreadSewingParams

Table 73: ThreadSewingParams

Input to: *GB HardcoverFin*, *GB SoftcoverFin*

Name	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
BlindStitch		w			r		
Sealing		w			r		
SewingPattern		w			r		
Normal		w			r		
Staggered		w			r		
Side		! w			r?		

7.43 Tool

Table 74: Tool

Input to: *GB BoxMaking*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
ProductID	w			r			
ToolType	w			r			

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
SourceResource	w?			r?			Contains reference to the **DieLayout** corresponding to this tool. SHOULD be written to uniquely identify the layout of the shape of a Component [@ProductType= "BlankBox"] for this tool. See Table 75: SourceResource.

7.43.1 SourceResource

Table 75: SourceResource

Referenced by: Tool

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
DieLayout	w?			r?			See Table 41: DieLayout.

7.44 TrimmingParams

Table 76: TrimmingParams

Input to: GB HardcoverFin, GB InsertFin, GB SoftcoverFin, GB StitchFin

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
Height	w			r			
TrimCover	w←			r			MUST be supplied if cover has flaps.
Width	w			r			

7.45 VerificationParams

Table 77: VerificationParams

Input to: Abstract GB MISFin

Name or Value	Manager			Worker			Description
Level ➜	1	2	3	1	2	3	
							All Attributes and Subelements are optional..

7.46 WrappingParams

Table 78: WrappingParams

Input to: *Abstract GB MISFin*

Name or Value	Manager			Worker			Description
Level ➔	1	2	3	1	2	3	
WrappingKind		w			r		
LooseWrap		w?			r		
ShrinkWrap		w?			r		

8   References

8.1   Normative References

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