

Instructions

- 1) The numbers are minimum testing frequencies for the in-house serial control of the production of dangerous goods packagings; if a design type is not produced, no examination is necessary .
- 2) The times mean production times; generally 8 hours are a production shift.
- 3) A lot corresponds to the production quantity of an order of one type of packaging, which is produced without interruption (other productions) or machine setup .
- 4) The frequencies only relate to each design type that has actually been manufactured during that period.
- 5) Of the mentioned alternative frequencies the most appropriate alternative arrangement shall be applied. This is defined in the QSP.
- 6) The numbers relate to the corresponding number of samples to be tested; i.e. one drop test shall be performed with one test sample monthly. The patterns for sampling shall take into account and alternate the different conditions such as different machines, molds , etc. in a suitable manner.
- 7) Thus, for the example of the drop test, the different drop orientations that were tested for the original design-type test report shall be tested in the course of the time. The drop test on the weakest part shall be carried out by preferential frequency.
- 8) For composite packagings specifications of the individual components and their correct assembly shall be tested with the corresponding frequencies. The internal pressure test, drop test and stacking test shall be performed on the combined package. The leakproofness test may be carried out on the combined package, or alternatively according to 6.1.1.3 ADR the inner receptable may be tested alone.
- 9) For the production of small lots, separate arrangements can be agreed with BAM.
- 10) Special arrangements might also be agreed, if a manufacturer holds a high number of similar type approvals.
- 11) As far as possible, a packaging test sample can be used for the different tests to be performed. In case of failure, however, a new, undamaged sample shall be re-tested.

This Annex shall enter into force on 5.1.2016 with a transitional period of 6 months (11.1.2016). Further to this transitional period, lower test frequencies that have been recognized in a QSP before 2015-07-01, may be maintained until the corresponding QSP recognition expires.

The changes compared to the previous version are indicated in red.

Changes to this policy, for example, due to changes in the law or requirements of practice, can be implemented timely . BAM will inform the stakeholders respectively .

Packagings		Metal packagings wall thickness ≥ 0,5 mm	Metal packagings wall thickness < 0,5 mm	Plastic packagings	Wood boxes	Fiber drums	Bags plastics/paper	Fibreboard boxes
		1A, 3A, 4A, 1B, 4B, 6HA	1A, 3A, 0A, 1B	1H, 3H, 4H 6HH, 6PH	4C, 4D, 4F	1G	5H, 5M	4G, 6HG
1	Material (according to the specifications and parameters in the type approval test report)	1 per delivery of the raw materials (a)						e.g. paper grade, grammage
2	Finished or semi-finished products by external procurement (according to the specifications and parameters in the type approval test report)	1 per delivery of the supplied items (a)						e.g. paper grade, sequence, grammage
3	Special material parameters (Cobb test, bursting strength, puncture test (b,c))							per lot finished packgings / per lot of (supplied) fibreboard
4	Quality relevant dimensions (functional dimensions, material thickness)	1 of 1000 / 1 per lot	1 of 5000 / 1 per lot	every 24 hours / 1 per lot	1 of 500/1 per lot	1 per lot / 1 per 1000	every 4 hours / 1 per lot	1 per lot
5	Correct assembly				1 of 500 / 1 per lot			
6	Visual inspection of the connections/seams/ seals/flanging, chime/inside (d)	1 of 1000 / 1 per lot	1 of 5000 / 1 per lot	every 4 hours / 1 per lot	1 of 500 / 1 per lot	every end seam / bonding	every 4 hours / 1 per lot	manufacturer seam, quality of the creasing: 1 per lot
7	Gaskets / seals / valves (correct installation and functioning)	1 of 1000 / 1 per lot	1 of 5000 / 1 per lot	every 4 hours / 1 per lot	1 of 500 / 1 per lot	1 per lot / 1 per 1000	every 4 hours / 1 per lot	
8	Mass of the finished packagings (o)	1 per lot (p)	1 per lot (p)	every 24 hours / 1 per lot		1 per lot / 1 per 1000		1 per lot
9	Minimum wall thickness			every 8 hours / 1 per lot				every
10	Surface treatment				1 of 500 / 1 per lot			
11	Control of the individual layers (paper grade, grammage, sequence) (q)						every 4 hours / 1 per lot	1 per lot/ 1 pro supplied lot
12	(UN-)Marking (correctness, legibility, durability) (e)	1 of 1000 / 1 per lot	1 of 5000 / 1 per lot	every 4 hours / 1 per lot	1 of 500 / 1 per lot	1 per lot / 1 per 1000	every 4 hours / 1 per lot	1 per lot
13	Leakproofnesstest during serial production (packagings intended to contain liquids)	every	every (except 0A with ADR/RID marking)	every				every
14	Leakproofnesstest capable of meeting the test level of ADR 6.1.5.4.3 (packagings for liquids) (j , s)	1 per month (k, l)	1 per month (k)	1 per month				

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15	Drop test	1 per month (k, l, m)	1 per month (k)	1 per month (r) (≤ -18 °C)	according to individual testplan	1 per month (n)	3 of 20.000 (f)	1 per lot (g)
16	Internal pressure (hydraulic) test (packagings for liquids)	1 per month (k, l, m)	1 per month (k)	1 per month				1 per month
17	Stacking test	1 per 6 months	1 per 6 months	1 per month (h), (r)	according to individual testplan	1 per month (n)		5 per lot (i)
18	User manual/user documentation (incl . closure / sealing instructions)	shall be provided to the customer with the first delivery / when updated (e.g. via internet)						

- a) e.g. factory certification, suppliers test report, **or** own testing; testing conditions according to the test report of the design type approval.
For 4G: purchased pre-cut corrugated board is regarded as semi-finished products.
For 5H4 purchased flat films are regarded as semi-finished products.
- b) Cobb-value according to ISO 535:1991, 1 single test
+ Puncture resistance (DIN 53142), 10 individual tests (5 per top/back), Undercutting the average of up to 10% is permissible
- c) Burst strength (ISO 2759) , 10 individual tests , (5 per top/back), Undercutting the average of up to 10% is permissible
- d) combination packaging: interior of the outer packaging visually 1 per 1000 pieces
- e) e.g. via control of the release of the print(er) settings
- f) each additional 20,000 pieces : +1 further drop test
- g) 4G - drop test with polybag by manufacturer on the weakest part
passing criterion : a crack may not be > 1/3 of the affected package edge ; the length of the crack must be documented in% to the length of the package edge
when other original inner packaging is used, the ADR rules apply **i.e. no leakage of the filling and / or no leakage of the inner packaging.**
- h) dynamic compression resistance instead of static stacking test possible
according to DIN 55440-1 for empty packagings; according to ISO 12048 for filled packagings ready to ship
- i) BCT stacking test according to DIN 55440-1 : undercutting the average of up to 10% is permissible
- j) statistical evidence of the test level shall be secured by additional appropriate methods,
Reduction of the test pressure to 0.15 bar (X - coding) or 0.1 bar (Y- and Z- coding) for the bubble test is possible, when wetting agent is added.
- k) per body inside diameter (for example, 571.5 mm) and per package type (for example, 1A1), but at least every 6 months for every produced approval
if the approval comprises several levels of performance for a specification, the maximum performance level shall be tested per approval
if necessary, several approvals can be combined into one series type approval certificate.
- l) for remanufacturing: 1 in 6 months

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- m) Special scheme for steel packagings, airbag transport packagings and **steel drums with wall thicknesses > / = 2 mm**: 1 in 24 months
For partially welded stainless steel packagings in small series (up to 1000 / year) the following special frequency applies: tests every 2000 pieces
- n) per drum inside diameter
- o) Determination of the total mass from the sum of the determined masses of the individual components is possible
- p) Remanufacturing: alternatively : mass determination or wall thickness measurement
- q) **During (after) the production process it is sufficient to control of the order of the starting materials. Information about the parameters of the paper is required only if not covered by lines 1 or 2.**
- r) **Plastic packaging for solids, gross mass less than or equal to 10kg, production less than 4,000 per year: 1 drop test (-18°C) and stacking test 1 of 4000 pieces or at least every 24 months.**
- s) **Only necessary if within the 100% test (line 13) the ADR test level (bubble test) is not reached.**

IBC		metal IBCs	Rigid plastics and composite IBCs	wooden IBCs	flexible IBCs	fibreboard IBCs
		11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B, 31N	11H, 21H, 31H, 11HZ1, 21HZ1, 31HZ1, 11HZ2, 21HZ2, 31HZ2	11C, 11D, 11F	13H, 13L	11G
1	Material (according to the specifications and parameters in the type approval test report)	1 per delivery of the raw materials (a)				e.g. paper grade, grammage
2	Finished or semi-finished products by external procurement (according to the specifications and parameters in the type approval test report)	1 per delivery of the supplied items (a)				e.g. paper grade, sequence, grammage
3	Special material parameters (Cobb test, bursting strength, puncture test (b,c))					per lot finished packgings / per lot of (supplied) fibreboard
4	Quality relevant dimensions (functional dimensions, material thickness)	every 8 hours / 1 per lot	every 8 hours / 1 per lot	1 of 250 / 1 per lot	1 of 250 / 1 per lot	1 of 250 / 1 per lot
5	Correct assembly		every 4 hours / 1 per lot (d)	1 of 250 / 1 per lot		
6	Visual inspection of the connections/seams/seals/flanging, chime/inside (d)	every IBC	every 4 hours / 1 per lot (d)		every IBC	1 of 250 / 1 per lot
7	Gaskets / seals / valves (correct installation and functioning)	every 8 hours / 1 per lot		1 of 250 / 1 per lot	1 of 250 / 1 per lot	1 of 250 / 1 per lot
8	Minimum wall thickness		every 8 hours / 1 per lot			
9	Control of the individual layers (paper grade, grammage, sequence) (q)					1 per lot/ 1 pro supplied lot
10	Surface treatment	alle 8 Stunden/ 1 pro Los		1 of 250 / 1 per lot		
11	Mass of the finished IBC	1 per 100 / 1 per lot	every 24 hours / 1 per lot			
12	Mass of the inner receptacle of composite IBC		every 4 hours / 1 per lot			
13	marking of the inner receptacle of composite IBC		every 4 hours / 1 per lot			
14	(UN-)Marking (correctness, legibility, durability) €	every IBC	every	every	1 per 1000 / 1 per lot	every (e)
15	non-destructive testing of welding seams, e.g. ultrasonic; X-ray etc.	1 per 100 / 1 per lot				
16	Nondestructive testing of socket welds	1 per 100 / 1 per lot				
17	Leakproofnesstest during serial production (IBCs intended to contain liquids)	every IBC (f)	every			

IBC		metal IBCs	Rigid plastics and composite IBCs	wooden IBCs	flexible IBCs	fibreboard IBCs
		11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B, 31N	11H, 21H, 31H, 11HZ1, 21HZ1, 31HZ1, 11HZ2, 21HZ2, 31HZ2	11C, 11D, 11F	13H, 13L	11G
18	Leakproofnesstest capable of meeting the test level of ADR 6.5.4.3 (IBCs for liquids) (j), (o)	1 per month	1 per month			
19	Drop test (l), (m)		1 per 7500 (h)/ 1 pre year	1 per 1500 / 1 per year	1 per 1000 / 1 per year	1 per 1500 / 1 per year
20	Internal pressure (hydraulic) test (IBCs for liquids) (l)		1 per 7500 (h)/ 1 per year			
21	Stacking test					1 per lot (k)
22	Service equipment (functioning)	every	every (g)			
23	Bottom lift test			according to individual testplan/ 1 per 50		according to individual testplan/ 1 per 500 / (i)
24	Top lift test				1 per 1000 / 1 per year	
25	Topple test				1 per 1000 / 1 per year	
26	Righting test				1 per 1000 / 1 per year	
27	User manual/user documentation (incl . closure / sealing instructions)	shall be provided to the customer with the first delivery / when updated (e.g. via internet)				

- a) e.g. factory certification, suppliers test report, or own testing; testing conditions according to the test report of the design type approval.
For 11G: purchased pre-cut corrugated board is regarded as semi-finished products.
- b) Cobb-value according to ISO 535:1991, 1 single test
+ Puncture resistance (DIN 53142), 10 individual tests (5 per top/back), Undercutting the average of up to 10% is permissible
- c) Burst strength (ISO 2759) , 10 individual tests , (5 per top/back), Undercutting the average of up to 10% is permissible; Minimum 15 J (see ADR)
- d) as applicable: checking for errors of the outer frame (especially which could damage the inner receptacle / tank), as well as the fixing elements (welds, joints etc.)
- e) e.g. via control of the release of the print(er) settings
- f) possible also before galvanisation
- g) test can also be performed separately or confirmation by suppliers test report
- h) Scheme for small production series: 1 test at/after total production of 7500 units (over all design types)
- i) alternatively: testing of 1 sample during each surveillance visit
- j) statistical evidence of the test level shall be secured by additional appropriate methods,
Reduction of the test pressure to 0.15 bar (X - coding) or 0.1 bar (Y- and Z- coding) for the bubble test is possible, when wetting agent is added.

IBC	metal IBCs	Rigid plastics and composite IBCs	wooden IBCs	flexible IBCs	fibreboard IBCs
		11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B, 31N	11H, 21H, 31H, 11HZ1, 21HZ1, 31HZ1, 11HZ2, 21HZ2, 31HZ2	11C, 11D, 11F	13H, 13L

- k) **only** for stackable IBCs , alternatively BCT stacking test according to DIN 55440-1 : undercutting the average of up to 10% is permissible **(if nominal values are contained in the approval test report)**
- l) New or additional design type tests (containing drop test and inner pressure test) for changes/new specifications in the design type approval will be accepted as tests according to this table.
- m) **in der Serienkontrolle reicht als Fundamentmasse das 15-fache der Bruttomasse des IBC**
- ~~m) Determination of the total mass from the sum of the determined masses of the individual components is possible~~
- n) for IBC 31HZ1 tests of design types may be grouped together when the inner receptacles have the same weight, shape and volume, and are only distinguished by their layered structure (additives), here the type to be expected weakest in performance shall be checked (usually a multi-layer version),
- o) **Only necessary if within the 100% test (line 13) the ADR test level (bubble test) is not reached.**
- q) **During (after) the production process it is sufficient to control of the order of the starting materials. Information about the parameters of the paper is required only if not covered by lines 1 or 2.**

Testing frequencies for the serial control

Large packagings		metal arge packagings	wooden large packagings	fibreboard large packagings
		50A, 50B	50D	50G
1	Material (according to the specifications and parameters in the type approval test report)	1 per delivery of the raw materials (a)		e.g. paper grade, grammage
2	Finished or semi-finished products by external procurement (according to the specifications and parameters in the type approval test report)	delivery of the supplied items (a)		e.g. paper grade, sequence, grammage
3	Special material parameters (Cobb test, bursting strength, puncture test (b,c))			per lot finished packgings / per lot of (supplied) fibreboard
4	Quality relevant dimensions (functional dimensions, material thickness)	every 8 hours/ 1 per lot	1 per 250 / 1 per lot	1 per 250 / 1 per lot
5	Correct assembly		1 per 250 / 1 per lot	
6	Visual inspection of the connections/seams/seals/flanging, chime/inside (d)	each	1 per 250 / 1 per lot	manufacturer seam, quality of the creasing: 1 per lot / 1 per 250
7	Gaskets / seals / valves (correct installation and functioning)	every 8 hours/ 1 per lot	1 per 250 / 1 per lot	1 per 250 / 1 per lot
8	Mass of the finished packagings (j)	1 per 100 / 1 per lot		1 per lot
9	Surface treatment		1 per 250 / 1 per lot	
10	Control of the individual layers (paper grade, grammage, sequence (k))			1 per lot/ 1 pro supplied lot
11	(UN-)Marking (correctness, legibility, durability) (e)	every 8 hours/ 1 per lot	1 per 250 / 1 per lot	1 per 250 / 1 per lot
12	Leakproofnesstest (large salvage packagings only)	1 per lot		
13	Drop test (i)	1 per 1500 / 1 per 3 years	1 per 1500 / 1 per year	1 per lot (f)
14	Stacking test (if intended for) (i)	1 per 1500 / 1 per 3 years	1 per 1500 / 1 per year	1 per lot (g)
15	Bottom lift test (if intended for) (i)	1 per 1500 / 1 per 3 years	1 per 1500 / 1 per year	according to individual testplan/ 1 per 500 (h)

16	Top lift test (if intended for) (i)	1 per 1500 / 1 per 3 years	1 per 1500 / 1 per year	according to individual testplan/ 1 per 500 (h)
17	User manual/user documentation (incl . closure / sealing instructions)	shall be provided to the customer with the first delivery / when updated (e.g. via internet)		

- a) e.g. factory certification, suppliers test report, or own testing; testing conditions according to the test report of the design type approval.
For 50G: purchased pre-cut corrugated board is regarded as semi-finished product.
- b) Cobb-value according to ISO 535:1991, 1 single test
+ Puncture resistance (DIN 53142), 10 individual tests (5 per top/back), Undercutting the average of up to 10% is permissible
- c) Burst strength (ISO 2759) , 10 individual tests , (5 per top/back), Undercutting the average of up to 10% is permissible; Minimum 15 J (see ADR)
- d) zusammengesetzte Verpackungen: Innenraum der Außenverpackung visuell 1 pro 1000 Stück
- e) e.g. via control of the release of the print(er) settings
- f) 50G-drop test with polybag by manufacturer on the weakest part
passing criterion : a crack may not be > 1/3 of the affected package edge ; the length of the crack must be documented in% to the length of the package edge
when other original inner packaging is used, the ADR rules apply i.e. no leakage of the filling and / or no leakage of the inner packaging.
- g) alternatively BCT stacking test according to DIN 55440-1 : with 5 large packagings (if the target values are available in the approval documentation) undercutting the average of up to 10% is permissible
- h) alternatively: testing of 1 sample during each surveillance visit
- i) One single sample may be used for all tests
- j) Determination of the total mass from the sum of the determined masses of the individual components is possible
- k) During (after) the production process it is sufficient to control of the order of the starting materials. Information about the parameters of the paper is required only if not covered by lines 1 or 2.